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ABSTRACT

This vocational program guide is intended to assist local administrators, regional coordinating councils, teachers, and others throughout Florida in offering vocational education training in fire fighting. The following topics are covered: program content and structure (occupational description, state certification requirements, certificate application and testing, certificate fees, curriculum framework, and student performance standards); facilities (Department of Education design criteria, state fire marshal criteria, equipment and supplies, audiovisual equipment, pertinent terms, equipment, intent of these standards, and safety); program implementation (student admission requirements, the instructional program, additional standards authorized, suggested instructional approach, suggested teaching methods, evaluation criteria, certificate of completion, student learning guides, cooperative training, and student organization participation); professional development (teacher certification, other qualifications, instructor standards, technical updating, and related professional organizations and support services); and instructional resources (print materials, audiovisual materials, computer courseware, and sources of instructional resource materials). A sample student learning guide is appended. The attached Career Merit Achievement Plan (Career MAP) is designed for use in recording the progress of students enrolled in a fire fighting training program. (MN)

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FLORIDA VOCATIONAL PROGRAM GUIDE FOR

FIRE FIGHTING

State of Florida
Department of Education
Tallahassee, Florida
Betty Castor, Commissioner
Affirmative action/equal opportunity employer

Division of Vocational, Adult, and Community Education
Bureau of Vocational Program and Staff Development

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INTRODUCTION

The Florida Vocational Program Implementation Guide can be applied to all vocational programs in Florida. This guide, however, has been developed to provide information that will be useful to local school-district and community-college administrators, faculty and instructors, program advisory committee members, regional coordinating councils, and others charged with the responsibility of offering vocational education training in Fire Fighting. The final planning, implementation, and evaluation of any educational program, however, must be done within the context of local conditions and local need. This publication will serve to identify the major concerns that should be considered in the organization, operation, and evaluation of this vocational education program.

Vocational education has evolved to meet the needs of students desiring to pursue selected vocations. In general, vocational education is designed to provide programs, services, and activities that are realistic in light of present and future employment opportunities. In recent years, applications of science and technology have expanded rapidly, increasing the education and training required of workers. The new technologies require many additional technical support staff to carry out both standardized and specialized procedures.

Today, vocational education is an increasingly viable option for students. The Florida Department of Education (DOE) shares with business and industry the determination to provide opportunities for upward mobility to as many Floridians as possible. For this to become a reality, exemplary career educational programs must be created and these programs must be consistent throughout the state.

State Board of Education Administrative Rule 6A 10.24: Articulation between universities, community colleges, and school districts outlines steps and guidelines that will bring about a systematic interrelationship among Florida institutions offering similar or related courses and programs. The rule states, in part, that:

> When a student transfers among postsecondary vocational-technical centers, community colleges, and universities, the receiving institution shall award credit for courses satisfactorily completed at the previous institutions when the courses are judged to be equivalent to courses offered at the receiving institution.

This program guide helps ensure that equivalency. Throughout Florida, vocational programs, if implemented according to the criteria described in this document, will help many citizens fill an important place in our state and national work force.

PROGRAM CONTENT AND STRUCTURE

The content of this vocational program is based on occupational tasks and employability skills required on the job in the Public Service area of Fire Fighting. The criteria used for evaluating student performances are based on job performance standards.

This section includes a description of the Fire Fighting occupation, a list of occupational tasks, and the Florida Curriculum Framework and Student Performance Standards (SPSs) for the Fire Fighting program. Local education agencies (LEAs) may modify SPSs to meet their local needs.

Because employing agencies may emphasize the task responsibilities of fire fighters in various ways, this occupational group includes those directly concerned with fighting fires as well as those concerned with inspecting fire-fighting equipment and factories, places of amusement, and other establishments. Other responsibilities may include detecting unsafe conditions, recommending improvements or repairs to reduce fire hazards, and investigating causes of fire and other hazards. Commonly encountered job titles are listed below with their corresponding codes from the Dictionary of Occupational Titles and the Florida Occupational Information System:

Job Title	DOT#	FOIS#
Fire Fighter	373.364-010	70100401
Fire Inspector (field inspector)	373.267-010	70100402
Fire Officer (marshal or chief)	373.167-018	70100403

Occupational Description

The following description of fire fighter tasks (373.364-010 or 70100401) appears in the Dictionary of Occupational Titles:

> Controls and extinguishes fires, protects life and property, and maintains equipment as volunteer or employee of city, township, or industrial plant: Responds to fire alarms and other emergency calls. Selects hose nozzle, depending on type of fire, and directs stream of water or chemicals onto fire. Positions and climbs ladders to gain access to upper levels of building or to assist individuals from burning structures. Creates openings in buildings for ventilation or entrance, using ax, chisel, crowbar, electric saw, core cutter, and other power equipment. Protects property from water and smoke by use of waterproof salvage covers, smoke ejectors, and deodorants. Administers first aid and artificial respiration to injured persons and those overcome by fire and smoke. Communicates with superior during fire, using portable two-way radio. Inspects buildings for fire hazards and compliance with fire prevention ordinances. Performs assigned duties in maintaining apparatus, quarters, buildings, equipment, grounds, and hydrants. Participates in drills, demonstrations, and courses in hydraulics, pump operation, and maintenance, and fire-fighting techniques. May fill fire extinguishers in institutions or industrial plants. May issue

forms to building owners listing fire regulation violations to be corrected. May drive and operate fire-fighting vehicles and equipment. May be assigned duty in marine divison of fire department and be designated FIREFIGHTER, MARINE (any ind.).

State Certification Requirements

The State Fire Marshal requires completion of an approved fire-fighter training program of not less than 240 hours as one of the requirements for state certification. A certificate of compliance is issued to any individual satisfactorily complying with the training program.

No person may be employed as a regular or permanent fire fighter by the employing agency for a period of time in excess of one year from the date of initial employment unless that person has obtained such certificate of compliance.

A certificate may be issued to any person who has received training in another state when (1) the division has determined that such training was at least equivalent to that required by the division for approved fire-fighter education and training programs in this state and (2) such person has satisfactorily complied with all other requirements of **Section 633.35, F.S.**

Section 633.34, F.S., outlines the minimum qualifications for employment to become a fire fighter. The applicant must:

1. be a high school graduate or the equivalent, as the term may be determined by the division.

2. not have been convicted of a felony or a misdemeanor involving moral turpitude as the term is defined by law. If an applicant has been convicted of a felony, such applicant must be in compliance with S. 112.011 (2) (b). If the sentence is suspended or adjudication is withheld in a felony charge involving moral turpitude and a period of probation is imposed, the applicant must have been released from probation.

3. have his or her fingerprints on file with the division or an agency designated by the division.

4. have a good moral character as determined by investigation under procedure established by the division.

5. be in good physical condition as determined by a medical examination as prescribed by the division. Such examination may include, but need not be limited to, provisions of the National Fire Protection Association Pamphlet 1001.

Certificate Application and Testing

One can obtain a certificate from the State Fire Marshal upon satisfaction of the requirements of Chapter 633, Florida Statutes, Subsection 521, paragraphs (1), (2a), (2b), (3), and (4):

(1) To obtain a certificate, an applicant shall submit to the State Fire Marshal an application in writing, on a form provided by the State Fire Marshal containing the information prescribed, which shall be accompanied by the fee fixed herein, containing a statement that the applicant desires the issuance of a certificate and stating the class of certificate requested.

(2)(a) Examinations shall be administered by the State Fire Marshal and held at times and places within the state as the State Fire Marshal determines, but there shall be at least two examinations a year. Each applicant shall take and pass an objective, written examination of his fitness for a certificate in the class for which the application is requested. There shall be a type of examination for each of the classes of certificates defined in S. 633.021(5). The examination shall test the applicant's ability to lay out, fabricate, install, alter, and repair fire protection systems and their appurtenances in compliance with applicable pamphlets of the National Fire Protection Association. It shall be an open-book examination consisting of multiple-choice, fill-in, true-false, or short-answer questions and may include or consist of diagrams, plans, or sketches in connection with which the applicant is required to demonstrate his knowledge of construction by answering questions keyed to such diagrams, plans, or sketches. All such examinations, of which there shall be at least two alternative versions, shall be prepared by an independent professional testing agency, subject to approval by the board.

(b) A passing grade on the examination is 70 percent, and such examinations shall be developed by an independent professional testing agency. The tests shall be prepared, administered, and scored in compliance with accepted professional testing standards.

(3) As a prerequisite to taking the examination, the applicant shall possess 4 years' proven experience in the employment of a contractor or educational equivalent thereto or a combination thereof. Within 30 days from the date of the examination, the State Fire Marshal shall inform the applicant in writing whether he has qualified or not and, if the applicant has qualified, that he is ready to issue a certificate of competency, subject to compliance with the requirements of subsection (4).

(4) As a prerequisite to issuance of a certificate, the State Fire Marshal shall require the applicant to submit satisfactory evidence that he has obtained insurance providing coverage for comprehensive general liability for bodily injury and property damages, products liability, completed operations, and contractual liability. The State Fire Marshal may adopt rules providing for the amount of insurance, but such amount shall not be less than $500,000 for all classes of contractors.

Note: "If an applicant for an original certificate, after having been notified to do so, does not appear for examination within 1 year from the date of filing his application, the fee paid by him shall be forfeited. New applications for a certificate shall be accompanied by another application fee fixed by this act. Forfeiture of a fee may be waived by the State Fire Marshal for good cause."

Certificate Fees

Pursuant to Chapter 633, Florida Statutes, Subsection 524, the initial application fee for each class of certificate shall be $300.00. Abstracted from this section is the annual renewal fee, which shall be $150.00 for a Contractor I, II, or III certificate, and $180.00 for a Contractor IV certificate.

Note: The certificate is effective statewide and it is forbidden by law (633.531, F.S.) for a certificate holder to sell or otherwise transfer one's own certificate to another person.

For additional information, refer to Chapter 633, Florida Statutes.

Curriculum Framework and Student Performance Standards

Program objectives should be consistent with the Vocational Education Program Course Standards as approved by the Florida State Board of Education.

Provided on the following pages are the Curriculum Framework and Student Performance Standards (SPSs) for the Fire Fighting program as listed in the official Vocational Education Program Courses Standards document. Since these SPSs are updated annually, you may need to check with your district's Public Service Occupations Education Supervisor and with the DVACE's regional Program Specialist for a current version every year.

CURRICULUM FRAMEWORK
FLORIDA DEPARTMENT OF EDUCATION

PROGRAM AREA: Public Service
EFFECTIVE DATE: July, 1989

PROGRAM TITLE: Fire Fighting

CODE NUMBER: Secondary 8918100 Postsecondary FFP005
Florida CIP 0743.020300

SECONDARY SCHOOL CREDITS: 2 COLLEGE CREDITS: ____

POSTSECONDARY ADULT VOCATIONAL CREDITS: ____

APPLICABLE LEVELS: ____ 7-9 ____ 9-12 12, 30, 31 Other
____ Postsecondary Adult Vocational ____ Postsecondary Vocational

CERTIFICATION COVERAGE:

GRADE 12:	GRADE 30-31:
FIRE FIGHT 7	FIRE FIGHT 7
FIREMANSHIP @7	PUB SERV @7
	FIREMANSHIP @7

I. **Major Concepts/Content.** The purpose of this program is to prepare students for employment as fire fighters (DOT# 373.364-010) or to provide supplemental training for persons previously or currently employed in this occupation. The program prepares students for certification as fire fighters in accordance with Florida Statute 633. The program must be approved by the Division of State Fire Marshal, Bureau of Fire Standards and Training.

Outcomes and Student Performance Standards in this program have been adapted from the National Fire Protection Association Fire Fighter Professional Qualifications (NFPA 1001) for Fire Fighter I and II, as regulated by the Florida Bureau of Fire Standards and Training, Florida Statute 633, and State Fire Marshal Rules.

The content includes, but is not limited to, orientation to the fire service, fire alarms and communication, apparatus and equipment, fire behavior, portable extinguishers, fire streams, fundamentals of extinguishment, ladders, hoses, tools and equipment, forcible entry, salvage, overhaul, ventilation, rescue, protective breathing equipment, first responder, water supplies, principles of inservice inspections, safety, controlled burning, and employability skills.

Reinforcement of basic skills in English, mathematics, and science appropriate for the job preparatory programs is provided through vocational classroom instruction and applied laboratory procedures or practice.

Listed below are the courses that comprise this program when offered at the secondary level:

8918110 Fire Fighting I
8918120 Fire Fighting 2

II. **Laboratory Activities.** Laboratory and field activities are included as an integral part of this program.

The rules of the State Fire Marshal Chapter 4A-37, Standards and Training, state:

In demonstrations involving the use of equipment and performance of tasks under non-hazardous conditions, whether in the classroom or the field, there shall be no less than one certified instructor for each ten students participating in the demonstrations.

In field work involving the handling of equipment and performance of tasks under conditions considered hazardous, there shall be no less than one certified instructor for each six students, but in no case shall there be less than two certified instructors on the scene. The instructors shall be placed to oversee the safety and effectiveness of the training.

III. **Special Note.** Completing this program and passing the Minimum Standards Examination of the Bureau of Fire Standards and Training (written and practical) are required before program completers can be certified. Besides certification, which must be attained within one year of initial employment as a fire fighter, other basic requirements for employment include high school graduation or equivalent, not convicted of a felony, having fingerprints on file, passing physical examination, and good moral character. Refer to F.S. 633 and State Fire Marshal rules for specifics.

The minimum length of this program is 240 hours as established by Florida Statute 633 and State Fire Marshal Rules.

The cooperative method of instruction may be utilized for this program. Whenever the cooperative method is offered, the following is required for each student: (1) a training plan, signed by the student, the teacher, and employer which includes instructional objectives and a list of on-the-job and in-school learning experiences; and (2) a work station which reflects equipment, skills, and tasks which are relevant to the occupation which the student has chosen as a career goal. The student must receive compensation for work performed.

If this program is offered for 450 hours or more, in accordance with Section 233.0695, F.S., the minimum basic skills grade level required for this postsecondary adult vocational program is: Mathematics 10.0, Language 10.0. This grade level number corresponds to a grade equivalent score obtained on a state-designated basic skills examination.

IV. **Intended Outcomes.** After successfully completing this program, the student will be able to:

01.0 Demonstrate knowledge of fire department organization and procedures.
02.0 Use fire alarms and communications equipment.
03.0 Demonstrate knowledge of fire behavior.
04.0 Use portable fire extinguishers.
05.0 Use self-contained breathing apparatus.
06.0 Demonstrate knowledge of fire apparatus.

07.0 Use forcible-entry equipment.
08.0 Demonstrate ventilation practices.
09.0 Use ropes, tools, and equipment.
10.0 Demonstrate rescue procedures.
11.0 Demonstrate safety procedures.
12.0 Use ladders.
13.0 Use fire hose, nozzles, and appliances.
14.0 Use fire streams.
15.0 Use water supplies.
16.0 Use sprinkler systems.
17.0 Demonstrate salvage procedures.
18.0 Demonstrate overhaul procedures.
19.0 Follow fire-prevention inspection practices.
20.0 Demonstrate knowledge of the fundamentals of extinguishment.
21.0 Follow health and human relations practices.
22.0 Provide emergency medical care.
23.0 Participate in a physical fitness program.
24.0 Participate in fire-training examinations.
25.0 Participate in controlled-burning exercises.
26.0 Demonstrate employability skills.
27.0 Obtain certification as a fire fighter.
28.0 Demonstrate knowledge of sexually transmitted diseases (STDs), including AIDS.

V. **Definitions.** The following definitions are taken from NFPA 1001:

define: to describe the basic qualities and principles.
demonstrate: to show by actual use.
identify: to physically select, indicate, or explain verbally or in writing, using standard terms recognized in the fire service.

Note: When the word demonstrate is used in a standard, it shall require that actual performance and operation be accomplished, unless otherwise indicated. Simulation, explanation, and illustration may be substituted when actual operation is not feasible.

STUDENT PERFORMANCE STANDARDS | EFFECTIVE DATE: July, 1989

PROGRAM AREA: Public Service Occupations | SECONDARY NUMBER: 8918100

PROGRAM TITLE: Fire Fighting | POSTSECONDARY NUMBER: FFP005

01.0 DEMONSTRATE KNOWLEDGE OF FIRE DEPARTMENT ORGANIZATION AND PROCEDURES--The student will be able to:

- 01.01 Identify the organization of the fire department.
- 01.02 Identify the size of the fire department, the scope of its operation, and standard operational procedures.
- 01.03 Identify the fire department rules and regulations that apply to the position of fire fighter.
- 01.04 Identify the responsibilities of the fire fighter in determining the point of origin, cause, and protection of evidence in fires.
- 01.05 Identify procedures for shutting off gas service to a building.
- 01.06 Identify procedures for shutting off electrical service to a building.

02.0 USE FIRE ALARMS AND COMMUNICATION EQUIPMENT--The student will be able to:

- 02.01 Define the procedure for a citizen to report a fire or other emergency.
- 02.02 Demonstrate receiving an alarm or a report of an emergency and initiate action.
- 02.03 Define the purpose and function of all alarm-receiving instruments and personnel-alerting equipment in the fire station.
- 02.04 Identify traffic control devices installed in the fire station to facilitate the response of apparatus.
- 02.05 Identify prescribed fire department radio procedures.
- 02.06 Define policy and procedures concerning the ordering and transmitting of multiple fire alarms and calls for special assistance from the emergency scene.
- 02.07 Identify areas assigned for first-alarm response.
- 02.08 Demonstrate both mobile and portable radio equipment.
- 02.09 Identify fire department radio procedures.
- 02.10 Identify supervisory alarm equipment provided in the fire station and prescribed action to be taken upon receipt of designated signals.
- 02.11 Identify fire location indicators provided to direct fire fighters to specific locations in protected public or private properties.

03.0 DEMONSTRATE KNOWLEDGE OF FIRE BEHAVIOR--The student will be able to:

- 03.01 Define fire.
- 03.02 Define the fire triangle and tetrahedron.
- 03.03 Identify two chemical, mechanical, and electrical energy heat sources.

03.04 Define the following potential stages of fire: (a) incipient, (b) flame spread, (c) hot smoldering, (d) flash over, (e) steady state, and (f) clear burning.
03.05 Define the three methods of heat transfer.
03.06 Define the three physical stages of matter in which fuels are commonly found.
03.07 Define the hazard of finely divided fuels as they relate to the combustion process.
03.08 Define flash point, fire point, and ignition temperature.
03.09 Define concentration of oxygen in air as it affects combustion.
03.10 Identify three products of combustion commonly found in structural fires which create a life hazard.
03.11 Define the following units of heat measurement: (a) British thermal unit (Btu), (b) Fahrenheit (^{o}F), (c) Celsius (^{o}C), and (d) calorie (Cal).
03.12 Define thermal balance and imbalance.

04.0 USE PORTABLE FIRE EXTINGUISHERS--The student will be able to:

04.01 Identify the classification of types of fire in relation to the use of portable extinguishers.
04.02 Given a group of differing extinguishers, identify the appropriate extinguishers for various classes of fire.
04.03 Define the portable extinguisher rating system.
04.04 Demonstrate the use of portable fire extinguishers for each class of fire.

05.0 USE SELF-CONTAINED BREATHING APPARATUS--The student will be able to:

05.01 Identify at least four hazardous respiratory environments encountered in fire fighting.
05.02 Demonstrate the use of all types of self-contained breathing apparatus in a dense smoke environment.
05.03 Identify the physical requirements of the wearer, the limitations of the self-contained breathing apparatus, and the safety features of all types of self-contained breathing apparatus.
05.04 Demonstrate donning self-contained breathing apparatus while wearing protective clothing.
05.05 Demonstrate that the self-contained breathing apparatus is in a safe condition for immediate use.
05.06 Identify the procedure for cleaning and sanitizing self-contained breathing apparatus for future use.
05.07 Identify the procedure for daily inspection and maintenance of self-contained breathing apparatus.
05.08 Given each type of self-contained breathing apparatus, demonstrate the correct procedure for recharging.
05.09 Demonstrate emergency techniques, using self-contained breathing apparatus, to: (a) assist other fire fighters, (b) conserve air, and (c) show restriction in use of bypass valves.

06.0 DEMONSTRATE KNOWLEDGE OF FIRE APPARATUS--The student will be able to:

06.01 Identify the functions of a fire company.

06.02 Describe the functions of the following units: (a) pumper company, (b) aerial company, (c) rural company, (d) crash-fire-rescue, and (e) elevated platform.
06.03 Describe crash-fire-rescue and its uses.
06.04 Identify special equipment used in the following apparatus: (a) rescue, (b) chemical, (c) floodlight and power, and (d) air truck.

07.0 USE FORCIBLE-ENTRY EQUIPMENT--The student will be able to:

07.01 Identify and demonstrate the use of each type of manual forcible-entry tool.
07.02 Identify the method and procedure for properly cleaning, maintaining, and inspecting each type of forcible-entry tool and equipment.
07.03 Identify materials and construction features of doors, windows, roofs, floors, and vertical barriers and define the dangers associated with each in an emergency situation.
07.04 Identify the method and technique of forcible entry through any door, window, ceiling, roof, floor, or vertical barrier.

08.0 DEMONSTRATE VENTILATION PRACTICES--The student will be able to:

08.01 Define the principles of ventilation and identify its advantages and effects.
08.02 Identify the dangers present and precautions to be taken in performing ventilation.
08.03 Demonstrate opening various types of windows from inside and outside, with and without the use of fire department tools.
08.04 Demonstrate breaking window or door glass and removing an obstruction.
08.05 Demonstrate the ventilation of a roof and a floor using an axe.
08.06 Define the theory of a "back draft explosion."
08.07 Describe the use of different types of power saws and jackhammers.
08.08 Identify the different types of roofs, demonstrate the techniques used to ventilate each type, and identify the necessary precautions.
08.09 Identify the size and location of an opening for ventilation and the precautions to be taken during ventilation.
08.10 Demonstrate the removal of skylights, scuttle covers, and other covers on roof tops.
08.11 Demonstrate types of equipment used for forced ventilation.
08.12 Demonstrate ventilation using water fog.

09.0 USE ROPES, TOOLS, AND EQUIPMENT--The student will be able to:

09.01 Given the name, picture, or actual knot, identify it and describe the purpose for which it would be used.
09.02 Identify the construction characteristics and appropriate uses of natural and synthetic ropes.
09.03 Given the proper size and amount of rope, demonstrate tying a bowline knot, clove hitch, rescue knot, figure of eight knot, becket or sheet bend, and overhand safety knot.
09.04 Given the proper rope, demonstrate the bight, loop, round turn, and half hitch as used in tying knots and hitches.
09.05 Using an approved knot, hoist any selected forcible-entry tool, ground ladder, or appliance to a height of at least 20 feet (6m).

09.06 Demonstrate the techniques of inspecting, cleaning, maintaining, and storing rope.
09.07 Given a simulated fire fighting or rescue task, select the appropriate size, strength, and length of rope for the task.
09.08 Select and tie a rope between two objects at least 15 feet (4.6m) apart that will support the weight of a fire fighter on the rope.
09.09 Use a rope to tie ladders, hoses, and other equipment to secure them to immovable objects.
09.10 Given the name and picture of or actual tool, identify it and demonstrate its use, care, and maintenance.

10.0 DEMONSTRATE RESCUE PROCEDURES--The student will be able to:

10.01 Demonstrate the removal of injured persons from the immediate hazard by the use of carries, drags, and stretchers.
10.02 Demonstrate searching for victims in burning, smoke-filled buildings or other hostile environments.
10.03 Define the uses of a life belt.
10.04 Define safety procedures as they apply to rescue.
10.05 Demonstrate the techniques of removing debris, rubble, and other materials.
10.06 Define the use of the following rescue tools: (a) shoring blocks, (b) trench jacks, (c) block-and-tackle, (d) hydraulic devices, and (e) pneumatic devices.
10.07 Demonstrate the technique of preparing a victim for emergency transportation by using standard available equipment or by improvising a method.
10.08 Identify the dangers of search-and-rescue missions in tunnels, caves, construction sites, and other hazardous areas.
10.09 Operating as a member of a team, demonstrate the extrication of a victim from a vehicle accident.
10.10 Tie a standard rescue knot on and lower a person from a third-floor level.
10.11 Identify safety procedures used during elevator rescue operations.

11.0 DEMONSTRATE SAFETY PROCEDURES--The student will be able to:

11.01 Identify dangerous building conditions created by fire.
11.02 Demonstrate techniques for action when trapped or disoriented in a fire situation or a hostile environment.
11.03 Define procedures to be used in electrical emergencies.
11.04 Define fire service lighting equipment.
11.05 Identify safety procedures when using fire service lighting equipment.
11.06 Demonstrate the use of portable power plants, lights, cords, and connectors.
11.07 Demonstrate the service and maintenance of portable power plants and lighting equipment.
11.08 Define safety procedures as they apply to emergency operations. The specific areas to be defined are: (a) protective equipment, (b) team concept, (c) portable tools and equipment, (d) riding an apparatus, and (e) hazardous materials incidents.

12.0 USE LADDERS--The student will be able to:

12.01 Identify each type of ladder and define its use.
12.02 Operating as an individual and as a member of a team, demonstrate the following ladder carries: (a) one-person carry, (b) two-person carry, (c) three-person carry, (d) four-person carry, (e) five-person carry, and (f) six-person carry.
12.03 Operating as an individual and as a member of a team, raise each type and size of ground ladder using several different raises for each ladder.
12.04 Climb the full length of each type of ground and aerial ladder.
12.05 Climb the full length of each type of ground and aerial ladder carrying fire-fighting tools or equipment while ascending and descending.
12.06 Climb the full length of each type of ground and aerial ladder and bring an "injured person" down the ladders.
12.07 Demonstrate the techniques of working from ground or aerial ladders with tools and appliances, with and without a life belt.
12.08 Demonstrate the techniques of cleaning ladders.
12.09 Identify the materials used in ladder construction.
12.10 Identify the load safety features of all ground and aerial ladders.
12.11 Demonstrate inspection and maintenance techniques for different types of ground and aerial ladders.

13.0 USE FIRE HOSE, NOZZLES, AND APPLIANCES--The student will be able to:

13.01 Identify the sizes, types, amounts, and uses of hose carried on a pumper.
13.02 Demonstrate the use of nozzles, hose adaptors, and hose appliances carried on a pumper.
13.03 When given the necessary equipment and operating as an individual and as a member of a team, advance dry hose lines of two different sizes, both of which shall be 1 1/2 inch or larger, from a pumper (a) into a structure, (b) up a ladder into an upper floor window, (c) up an inside stairway to an upper floor, (d) up an outside stairway to an upper floor, (e) down an inside stairway to a lower floor, (f) down an outside stairway to a lower floor, and (g) to an upper floor by hoisting.
13.04 When given the necessary equipment and operating as a member of a team, advance charged attack lines of two different sizes, both of which shall be 1 1/2 inch or larger, from a pumper (a) into a structure, (b) up a ladder into an upper floor window, (c) up an outside stairway to an upper floor, (d) up an inside stairway to an upper floor, (e) down an inside stairway to a lower floor, (f) down an outside stairway to a lower floor, and (g) to an upper floor by hoisting.
13.05 Demonstrate the techniques for cleaning fire hose, couplings, and nozzles and inspecting for damage.
13.06 Connect a fire hose to a hydrant and fully open and close the hydrant.
13.07 Demonstrate the loading of fire hose on a fire apparatus and identify the purpose of at least three types of hose loads and finishes.
13.08 Demonstrate three types of hose rolls.
13.09 Demonstrate two types of hose carries.

13.10 Demonstrate coupling and uncoupling fire hose.
13.11 Work from a ladder with a charged attack line which shall be 1 1/2 inch or larger.
13.12 Demonstrate the techniques of carrying hose to be connected to a standpipe into a building and of advancing a hose line from a standpipe.
13.13 Demonstrate the methods for extending a hose line.
13.14 Demonstrate replacing a burst section of hose line.
13.15 Identify, select, and demonstrate the use of any nozzle.
13.16 Demonstrate all hand hose lays.
13.17 Demonstrate inspection and maintenance of fire hose, couplings, and nozzles, and recommend replacement or repair as needed.
13.18 Demonstrate all hydrant-to-pumper hose connections.
13.19 Select adapters and appliances to be used in a specific fire ground situation.

14.0 USE FIRE STREAMS--The student will be able to:

14.01 Define a fire stream.
14.02 Manipulate a nozzle so as to attack a Class A fire and a Class B fire.
14.03 Define water hammer and at least one method for its prevention.
14.04 Demonstrate how to open and close a nozzle.
14.05 Define the following methods of water application: (a) direct, (b) indirect, and (c) combination.
14.06 Given fire situations, select the proper nozzle and hose size for each.
14.07 Identify characteristics of all types of fire streams.
14.08 Identify precautions to be followed while advancing hose lines to a fire.
14.09 Identify three conditions that result in pressure losses in a hose line.
14.10 Identify four special stream nozzles and demonstrate at least two uses or applications of each.
14.11 Identify and define foam-making appliances and demonstrate a foam stream from each.
14.12 Identify three observable results that are obtained when the proper application of a fire stream is accomplished.
14.13 Identify and define those items required to develop three types of fire streams and demonstrate each.

15.0 USE WATER SUPPLIES--The student will be able to:

15.01 Identify the water distribution system and other water sources in the local community.
15.02 Identify the following parts of a water distribution system: (a) distributors, (b) primary feeders, and (c) secondary feeders.
15.03 Identify a dry-barrel hydrant and a wet-barrel hydrant.
15.04 Identify the following: (a) normal operating pressure of a water distribution system, (b) residual pressure of a water distribution system, and (c) flow pressure from an opening that is flowing water.
15.05 Identify the following types of main water valves: (a) indicating, (b) nonindicating, (c) post-indicating, and (d) outside screw and yoke.
15.06 Identify hydrant usability by: (a) obstructions to use of hydrant, (b) direction of hydrant outlets to suitability of use, (c) mechanical aboveground damage, (d) condition of paint for rust and corrosion, (e) the flow by fully opening the drain, and (f) ability to drain.

15.07 Define a tanker shuttle.
15.08 Identify the apparatus, equipment, and appliances required to provide water at rural locations by relay pumping, large diameter hose, or a tanker shuttle.
15.09 Demonstrate deployment of a portable water tank.

16.0 USE SPRINKLER SYSTEMS--The student will be able to:

16.01 Identify a fire-department sprinkler connection and water motor alarm.
16.02 Connect hose line(s) to a fire-department connection of a sprinkler or standpipe system.
16.03 Define how the automatic sprinkler heads open and release water.
16.04 Temporarily stop the flow of water from a sprinkler head.
16.05 Identify the Main Drain valve on an automatic sprinkler system.
16.06 Identify the Main Control valve on an automatic sprinkler system.
16.07 Operate a Main Control valve on an automatic sprinkler system from open to closed and then back to open.
16.08 Define the value of automatic sprinklers in providing safety to the occupants in a structure.
16.09 Identify and define the dangers of premature closure of sprinkler Main Control valve, and of using hydrants to supply hose streams when the same water system is supplying the automatic sprinkler system.
16.10 Identify the difference between an automatic sprinkler system that affords complete coverage and a partial sprinkler system.
16.11 Identify at least three sources of water for supply to an automatic sprinkler system.
16.12 Identify the following: (a) wet sprinkler system, (b) dry sprinkler system, (c) deluge sprinkler system, and (d) residential sprinkler system.
16.13 Demonstrate removing one head from a sprinkler system and replacing it with a head of the same type.

17.0 DEMONSTRATE SALVAGE PROCEDURES--The student will be able to:

17.01 Identify the purpose of salvage and its value to the public and the fire department.
17.02 Demonstrate folds and rolls of salvage covers as an individual and as a member of a team.
17.03 Demonstrate salvage cover throws as an individual and as a member of a team.
17.04 Demonstrate the techniques of inspecting, cleaning, and maintaining salvage equipment.
17.05 Given salvage equipment, demonstrate the construction and use of a water chute, operating as an individual and as a member of a team.
17.06 Given salvage equipment, demonstrate the construction and use of a water catchall, operating as an individual and as a member of a team.
17.07 Given salvage equipment except salvage covers, demonstrate the removal of debris and removal and routing of water from a structure.
17.08 Demonstrate the covering or closing of openings made during fire-fighting operations.

18.0 DEMONSTRATE OVERHAUL PROCEDURES--The student will be able to:

18.01 Demonstrate searching for hidden fires.
18.02 Demonstrate exposure of hidden fires by opening ceilings, walls, and floors, and pulling apart burned materials.
18.03 Demonstrate how to separate and remove charred material from unburned material.
18.04 Define the duties of fire fighters left at the fire scene for fire and security surveillance.
18.05 Identify the purpose of overhaul.
18.06 List the procedures to follow during overhaul.
18.07 Identify the safety precautions necessary during overhaul.

19.0 FOLLOW FIRE-PREVENTION INSPECTION PRACTICES--The student will be able to:

19.01 Identify the common causes of fires and their prevention.
19.02 Identify fire inspection procedures.
19.03 Define the importance of public relations to inspection programs.
19.04 Define dwelling inspection procedures.
19.05 Prepare diagrams or sketches of buildings to record the locations of items of concern during pre-fire planning operations.
19.06 Collect and record in writing information required for the purpose of preparing a report on a building inspection or survey.
19.07 Identify school exit drill procedures.
19.08 Identify life safety programs for the home.
19.09 Identify common fire hazards and make recommendations for their correction.

20.0 DEMONSTRATE KNOWLEDGE OF THE FUNDAMENTALS OF EXTINGUISHMENT--The student will be able to:

20.01 Define the fundamental steps in the process of fire extinguishment.
20.02 Identify the considerations involved with various types of structural fires.
20.03 List the sequence of activities involved with various amounts of fire within a structure.
20.04 Identify the elements of ground cover fire.
20.05 Demonstrate a knowledge of flammable liquids and gases.
20.06 Identify the fire-fighting techniques employed in combating flammable liquids and gases.

21.0 FOLLOW HEALTH AND HUMAN RELATIONS PRACTICES--The student will be able to:

21.01 Apply infection-control measures in accordance with Centers for Disease Control (CDC) guidelines.
21.02 Recognize and report signs of abuse and neglect.

22.0 PROVIDE EMERGENCY MEDICAL CARE--The student will be able to:

22.01 Identify a primary survey for life-threatening injuries.

22.02 Identify procedures for determining whether or not a victim has an open airway.
22.03 Identify procedures for establishing an open airway in a nonbreathing person.
22.04 Demonstrate mouth-to-mouth and mouth-to-nose resuscitation.
22.05 Demonstrate oronasal ventilation.
22.06 Identify the three signs of cardiac arrest.
22.07 Demonstrate cardiopulmonary resuscitation.
22.08 Identify three types of external bleeding and the characteristics of each type.
22.09 Demonstrate techniques for controlling external bleeding.
22.10 Identify four sources from which information might be gathered.
22.11 Given specific situations, identify what injuries might be in addition to those injuries that are obvious.
22.12 Given a "victim," conduct a secondary survey for other than life-threatening injuries.
22.13 Identify the signs and symptoms of internal bleeding.
22.14 Demonstrate the emergency care for a person with known or suspected internal bleeding.
22.15 Identify characteristics and emergency medical care of thermal burns according to severity.
22.16 Given a specific situation, demonstrate and define the sequential emergency medical care indicated.
22.17 Identify the emergency medical care for chemical burns including chemical burns of the eyes.
22.18 Define the types of fractures and describe the differences among them.
22.19 Identify three general signs and symptoms of fractures.
22.20 Given an identified fracture, demonstrate the emergency medical care necessary to transport the victim.
22.21 Identify the anatomical process of breathing.
22.22 Identify the heart-lung-brain relationship as it affects life and define what occurs when an airway obstruction is not corrected.
22.23 Demonstrate cardiopulmonary resuscitation employing the two-person technique.
22.24 Identify symptoms and demonstrate emergency medical care of traumatic shock.
22.25 Demonstrate the use of breathing-aid equipment.

23.0 PARTICIPATE IN A PHYSICAL FITNESS PROGRAM--The student will be able to:

23.01 Exercise each morning during training.
23.02 Participate in physical fitness exercises during training for a total of eight hours.

24.0 PARTICIPATE IN FIRE-TRAINING EXAMINATIONS--The student will be able to:

24.01 Take a test (written/oral) on each academic portion of the outline.
24.02 Take a performance test on certain portions of the outline.

25.0 PARTICIPATE IN CONTROLLED-BURNING EXERCISES--The student will be able to:

25.01 Practice exercises in fire control of structures.
25.02 Practice exercises in fire control of flammable liquids.
25.03 Practice exercises in fire control of natural or propane gas.
25.04 Practice exercises in fire control of vehicles.

26.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:

26.01 Conduct a job search.
26.02 Secure information about a job.
26.03 Identify documents that may be required when applying for a job.
26.04 Complete a job application.
26.05 Demonstrate competence in job interview techniques.
26.06 Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other persons.
26.07 Identify acceptable work habits.
26.08 Demonstrate knowledge of how to make job changes appropriately.
26.09 Demonstrate acceptable employee health habits.

27.0 OBTAIN CERTIFICATION AS A FIRE FIGHTER--The student will be able to:

27.01 Complete the basic fire-fighting course.
27.02 Pass the state certification test including practical examination.
27.03 Pass a physical examination based on NFPA 1001.
27.04 Certificate will depend upon a passing score.

28.0 DEMONSTRATE KNOWLEDGE OF SEXUALLY TRANSMITTED DISEASES (STDs), INCLUDING AIDS--The student will be able to:

28.01 Distinguish between fact and fallacy about the transmission and treatment of sexually transmitted diseases including HIV infection.
28.02 Identify community resources and services available to the victims of sexually transmitted diseases.
28.03 Identify at-risk behaviors which promote the spread of AIDS and the public education necessary to combat the spread of sexually transmitted diseases.
28.04 Apply infection-control techniques designed to prevent the spread of sexually transmitted diseases to the care of all patients, following Centers for Disease Control (CDC) guidelines.
28.05 Demonstrate knowledge of legal aspects of AIDS.

FACILITIES

This section includes Rules of Florida State Board of Education Educational Facilities: Public Schools and Community Colleges, Chapter 6A-2, Fire Fighting Laboratory design criteria; and State Fire Marshal criteria for skills training, equipment, and supplies, and safety as provided in Chapter 633, Florida Statutes: Fire Prevention and Control.

DOE Design Criteria

Program Facility Space	Min. Sq. Ft.	Norm. Sq. Ft.	Max. Sq. Ft.	Per Occupant
12-PS Fire Fighting Laboratory	90	100	110	15
A-2.1 Burn Building	1,000	1,100	1,200	
E-5.1 Fire Maze Building	1,000	1,100	1,200	
P-1 Storage, Flammable	70	75	80	
Q-4 Storage, Material	330	350	370	
S-8 Storage, Tool	330	350	370	

State Fire Marshal Criteria

In addition to the above, the following criteria are required by the State Fire Marshal:

Requirements for Installation, Inspection, and Maintenance of Fire Protective Equipment

- Contractors of fire safety and fire protective equipment required by rules and regulations of the State Fire Marshal shall be licensed under S. 633.061 or certified under S. 633.534.
- Equipment supplied shall be listed by a nationally recognized testing laboratory, such as Underwriters Laboratories, Inc., or Factory Mutual Laboratories, Inc.
- Equipment shall be installed in accordance with the applicable standards of the National Fire Protection Association and the manufacturer's specifications.
- Each piece of equipment supplied shall be guaranteed for a period of one year against defects in material or operation.
- The contractor shall furnish the user with operating instructions for all equipment installed, together with a diagram of the final installation.

- Each manufacturer or supplier of such equipment shall furnish the consumer with descriptive literature concerning equipment sold, together with mechanical drawings and specifications for proper installation and use of the equipment.

- Equipment shall be inspected, serviced, and maintained in accordance with the manufacturer's maintenance procedures.

Requirements for All Fire Extinguishers and Systems

- A standard service tag is required on all fire extinguishers and systems, whether they be portable, stationary, or on wheels when they are installed, serviced, repaired, tested, recharged, or inspected.

- It shall be unlawful to service, test, repair, inspect, install, or recharge any of the above fire extinguishing units without attaching one of these tags completed in detail, including the actual month work was performed, or to use a tag not meeting the specifications set forth by the State Fire Marshal.

- A serial number is required on all portable fire extinguishers. These serial numbers may be stamped on the manufacturer's identification and instructions plate or on a separate Underwriters Laboratories or Factory Mutual plate soldered or attached to the extinguisher shell in some permanent manner.

Facilities Inspection Requirements

Whenever the State Fire Marshal or his or her agents find that any of the following conditions exist, they may order the same removed or remedied within a reasonable length of time:

- Any building or structure inspected is in need of repair, in a delapidated condition, or especially liable to fire from any other cause, and situated so as to endanger life or property.

- Any building or structure inspected lacks sufficient fire escapes, alarm apparatus, or fire extinguishing equipment.

- Any building or structure inspected contains combustible or explosive matter or flammable conditions dangerous to the safety of life or property.

- The division and the Department of Education shall jointly prepare rules for safety inspections of facilities under the administration of district school boards and of community college boards of trustees.

- Every fire safety inspection which is required by law or by the rules and regulations of the State Fire Marshal shall be conducted by a person certified as having met the inspection training requirements set by the Division of State Fire Marshal of the Department of Insurance encompassing the occupancies to be inspected. The State Fire Marshal

shall maintain current files on all persons certified by the division to make fire safety inspections.

Requirements for Building Plans to Be Approved

- All construction of any new, or renovation, alteration, or change of occupancy of any existing, state-owned or state-leased space shall comply with the uniform fire safety standards of the State Fire Marshal.

- For all new construction or renovation, alteration, or change of occupancy of state-leased space, compliance with the uniform fire safety standards shall be determined by:

  -- Annual inspection of the space by the Division of State Fire Marshal; or
  -- Review of plans for the proposed construction or occupancy submitted by the lessor to the Division of State Fire Marshal for review and approval prior to commencement of construction or occupancy, which review shall be completed within 10 calendar days of receipt of the plans by the Division of State Fire Marshal.

Equipment and Supplies

Equipment and supplies should be provided and utilized to enable the students to achieve the objectives of the program. As much as possible, these items should be of the type and quality used in the field.

Audiovisual Equipment

Pursuant to the National Fire Protection Association (NFPA) 1041 Standard for Fire Service Instructor Professional Qualifications, the Level I Fire Service Instructor shall demonstrate the proper use of the following types of teaching aids and demonstration devices generally employed in training programs:

(a) Audiovisual equipment
(b) Projectable instructional materials
(c) Nonprojectable instructional materials

A Level II Fire Service Instructor shall prepare:

(a) Overhead transparencies
(b) Charts
(c) Diagrams
(d) Information sheets
(e) Student worksheets

A Level III Fire Service Instructor shall prepare or select appropriate instructional materials, having analyzed organizational needs and programs:

(a) Film strips
(b) Motion pictures

(c) Slides
(d) Videotapes
(e) Audio material
(f) Blueprints
(g) Mock-ups
(h) Models
(i) Photographs
(j) Program instructional materials
(k) Self-study material
(l) Student workbooks
(m) Textbooks
(n) Computer-aided instruction

Given the need for advanced instructional materials, a Level IV Fire Service Instructor shall analyze the need for and supervise the development of appropriate materials.

The ensuing lists of tools and equipment were abstracted from Section 10 of the National Fire Protection Association (NFPA) 1901 Automotive Fire Apparatus Standards document. The standards are subject to review and revision as necessary. The listings should prove useful to teachers and supervisors in that they provide a summary of equipment for various types of apparatus in this particular occupational area.

Note: A glossary of terms precedes the summary of equipment listings and should be used as a point of reference.

Glossary of Terms

1-4. General

1-4.1 This standard is prepared on a performance basis by the Committee on Fire Department Equipment of the National Fire Protection Association. The standard is subject to review and revision as necessary, with all proposals for revision being considered by the entire committee.

1-4.2 Officials shall plan for systematic replacement of fire apparatus as necessary to combat obsolescence, parts replacement difficulties, and increased maintenance costs, and to take advantage of improvements in fire department equipment.

1-5. Definitions

1-5.1 **Aerial Ladder Truck.** A ladder truck equipped with a permanently mounted, power-operated aerial ladder.

1-5.2 **Angle of Departure.** The smallest angle made between the road surface and the line drawn from the rear point of ground contact of the rear tire to any sprung projection of the truck behind the rear axle.

1-5.3 **Approved.** Acceptable to the authority having jurisdiction.

1-5.4 **Authority Having Jurisdiction.** The organization, office, or individual responsible for approving equipment, an installation, or a procedure.

1-5.5 **Compound Gauge.** A gauge reading pressure from 0 to maximum capacity in lb. per sq. in. and vacuum from 0 to 30 in. of mercury (Hg).

1-5.6 **Elevating Platform Apparatus.** A ladder truck equipped with permanently mounted, power-operated booms of articulating or telescoping construction or a combination of articulating and telescoping construction and with a passenger-carrying platform attached to the uppermost boom.

1-5.7 **Fire Apparatus.** The emergency vehicles of the fire department or fire brigade used for fire suppression.

1-5.8 **Gallons.** United States gallons (3.785 liters).

1-5.9 **GPM.** Gallons per minute (1 gpm = 3.785 liters per minute or L/min).

1-5.10 **Gross Axle Weight Rating or GAWR.** The value specified by the vehicle manufacturer as the load-carrying rating of a single axle system, as measured at the tire-ground interfaces.

1-5.11 **Gross Combination Weight Rating or GCWR.** The value specified by the manufacturer as the loaded weight of a combination vehicle.

1-5.12 **Gross Vehicle Weight Rating or GVWR.** The value specified by the manufacturer as loaded weight rating of a single vehicle.

1-5.13 **Labeled.** Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization acceptable to the "authority having jurisdiction." The organization shall be one that is concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

1-5.14 **Ladder Truck.** A piece of fire apparatus carrying at least the standard complement of ground ladders.

1-5.15 **Light Attack Vehicle.** A unit equipped with only a booster pump, no more than three designated seating positions, and a limited amount of equipment.

1-5.16 **Listed.** Equipment or materials included in a list published by an organization acceptable to the "authority having jurisdiction." The organization shall be one that is concerned with product evaluation, that maintains periodic inspection of production of listed equipment or materials, and whose listing states either that the equipment or material meets appropriate standards or has been tested and found suitable for use in a specified manner.

1-5.17 **May.** This term is used to state a permissive use or an alternative method to a specified requirement.

1-5.18 **Mobile Water Supply Apparatus.** A piece of fire apparatus whose primary purpose is transporting water, with a water tank of 1000-gal. capacity or larger. Truck should include a pump and have a limited hose body capacity.

1-5.19 **PSI.** Pounds pressure per square inch (6.895 kPa).

1-5.20 **PSIG.** Gauge pressure in pounds per square inch (pressure above atmospheric pressure).

1-5.21 **Pumper.** A piece of fire apparatus with a permanently mounted fire pump with a rated discharge capacity of 500 gpm or greater and complying with Chapter 3 of this standard; may also include a water tank and hose body.

1-5.22 **Pumper-Ladder Truck.** A ladder truck with a fire pump; may also include a water tank and hose body.

1-5.23 **Quadruple Ladder Truck.** A service ladder truck with a fire pump, water tank, and hose body.

1-5.24 **Quintuple Ladder Truck.** A quadruple ladder truck with an additional aerial device.

1-5.25 **Service Ladder Truck.** A ladder truck carrying at least the standard complement of ground ladders, but neither an aerial ladder nor an elevating platform.

1-5.26 **Shall.** This term indicates a mandatory requirement.

10-1. General

10-1.1 Each section of this chapter lists that equipment which shall be provided with each piece of apparatus, and additional equipment that may be carried.

10-1.2 If no list of equipment is attached by the purchaser, the manufacturer shall supply the equipment listed in Category A or the basic equipment for the particular type of apparatus being purchased.

10-1.3 The manufacturer shall provide such brackets of NFPA 1901 and compartments as are necessary for the basic equipment and other equipment specified in Special Provisions (See also 2-3.3.4).

10-2. Equipment Carried on Pumpers

10-2.1 Categories A and B list that equipment which shall be available on each piece of pumping apparatus. Equipment in Category A shall be supplied and mounted by the apparatus manufacturer unless otherwise directed by the purchaser.

Equipment in Category B shall be available on all pumpers before being placed in service. It may be supplied by the apparatus builder or by the

fire department. In either case, a detailed listing of who is to supply items in Category B shall be supplied by the purchasing authority.

Category C lists additional equipment which the fire department may require to meet local conditions.

Category A:

Axe--flat head, 6 lb.
Axe--pick head, 6 lb.
Hose--booster, 200 ft. of 1 in., on reel-equipped apparatus only

Exception: Where different hose dimensions are desired, purchaser shall specify this in Special Provisions.

Hose--suction, hard or soft; type, size, and length to be specified
Ladder--14 ft. with folding hooks
Ladder--24 ft. 2-section extension ladder
Nozzle--1 in. shut-off, variable gallonage; 100 psi (reel-equipped only)
Pike Pole--or plaster hook, 6 ft.
Pike Pole--8 ft. or 10 ft.; specify length
Strainer--for hard suction hose size, if specified

Category B:

Two portable hand lights with mounting brackets
Two approved portable fire extinguishers with mounting brackets. The variety shall be suitable for use on Class B and C fires. The minimum sizes shall be 20 BC rating in dry chemical or 10 BC rating in CO_2. The number and type of portable fire extinguishers desired shall be specified by the purchaser in Special Provisions.
One 2 1/2-gal. or larger water extinguisher with bracket
One swivel connection with suction hose thread on one end and local large hydrant thread on the other

Exception: Where large (over 4 in.) soft suction hose will be carried and where the ends mate with both apparatus and local hydrant threads, no adaptor will be required.

One swivel connection with pump suction threads on one end and local 2 1/2-in. hose thread on the other

Exception: Where a 4-in. or larger suction siamese, 2- or 3-way, is to be carried, this swivel connection is not required.

Four self-contained breathing apparatus (SCBA), positive pressure, NIOSH/MSHA approved, 30 minute or longer rated service life
Four SCBA cylinders, spare, to fit current SCBA
One first aid kit, minimum 24 units, mounted, fire department assortment
Four combination spanners, two on each side of apparatus, with brackets

Two hydrant wrenches, with brackets
One double-gated reducing Leader wye, sized to fit hose used in department
One double female, sized to fit hose used in department
One double male, sized to fit hose used in department
1200 ft. 2 1/2-in. or larger fire hose
400 ft. 1 1/2-in., 1 3/4-in., or 2-in. fire hose
Two combination fog nozzles, 200 gpm minimum
Two combination fog nozzles, 95 gpm minimum
Two playpipes, each with shutoffs and 1-in., 1 1/8-in., and 1 1/4-in. tips
One rubber mallet, suitable for use on suction connections

Category C:

Additional equipment that may be required to be carried on pumpers by the authority having jurisdiction in addition to that specified in Categories A and B
One fire service claw tool
One 16-in. or larger (5000 cfm or larger) smoke ejector. If electric driven, suitable adapter cord shall be supplied to fit standard house "U" ground outlets and extension cords and outlets on generators used in fire department.
One crowbar (36 in. minimum) with brackets
One pair insulated bolt cutters with 7/16 in. minimum cut
One Haligan type tool with brackets
One 2 1/2-in. hydrant valve (screw-type gate)
Four salvage covers
Two shovels (1 square end and 1 scoop)
Four hose straps
One 125-ft. utility rope (not for lifeline work)
One 3000-watt (minimum) portable generator
Two 500-watt portable lights
Two cord reels with minimum 200-ft. cord on each and connections compatible with lights, generator, and smoke ejector
Two metal containers, minimum 5-gal. capacity
One portable pump
Toolbox with hammers, wrenches, screwdrivers, and other assorted tools
Master stream appliance, 1000 gpm minimum
Foam equipment, 95 gpm minimum. Type of foam to be determined by local authorities.
One hose clamp

10-3. Equipment Carried on Mobile Water Supply Apparatus

10-3.1 Categories A and B list that equipment which shall be available on each mobile water supply apparatus. Equipment in Category A must be supplied and mounted by the apparatus manufacturer unless otherwise directed by the purchaser.

Equipment in Category B shall be available on all mobile water supply apparatus before being placed in service. It may be supplied by the apparatus builder or by the fire department. In either case, a detailed

listing of who is to supply items in Category B shall be supplied by the purchasing authority.

Category C lists additional equipment which the fire department may require to meet local conditions.

Category A:

Axe--pick head, 6 lb.
Hose--suction, hard or soft; type, size, and length to be specified. If hard suction hose is specified a minimum of 30 ft. shall be carried on the vehicle.
Strainer--for hard suction hose size, if specified

Category B:

One rubber mallet, 3 lb. minimum, suitable for large suction connections
One hydrant wrench with basket
Four combination spanners
400 ft. 2 1/2-in. or larger fire hose
400 ft. 1 1/2-in., 1 3/4-in., or 2-in. fire hose
One double male connection
One double female connection
One combination fog nozzle, minimum 200 gpm
One combination fog nozzle, minimum 95 gpm
Two approved portable fire extinguishers with mounting brackets. The variety shall be suitable for use on Class B and C fires. The minimum sizes shall be 20 BC rating in dry chemical or 10 BC rating in CO_2. The number and type of portable fire extinguishers desired shall be specified by the purchaser in Special Provisions.
Two SCBA, positive pressure NIOSH/MSHA approved, 30 minute or longer rated service life
Two SCBA cylinders, spare for current SCBA
Two portable hand lights with mounting brackets
One first aid kit, minimum 24 unit mounted, fire department assortment

Category C:

Ground ladder or ladders
Pike pole
Portable tank, 1000 gal. minimum
Two shovels
One 125-ft. utility rope, not for lifeline work
Toolbox with hammers, wrenches, screwdrivers, and assorted other tools
Double-gated reducing wye, sized to fit hose used in the department
Low-level strainer, designed for use with portable tanks

10-4. Equipment Carried on Ladder Trucks

10-4.1 Basic equipment shall be provided as follows unless otherwise specified by purchaser.

Four SCBA, positive pressure, NIOSH/MSHA approved, 30 minute or longer rated service life
2 pick-head axes (6 lb.)
2 flat-head axes (6 lb.)
2 crowbars, 50-in. minimum
1 claw tool
2 approved portable fire extinguishers. The variety shall be suitable for use on Class A, B, and C fires. The minimum sizes shall be 20 BC rating in dry chemicals, 10 BC rating in CO_2, and 2 A rating in water-type extinguishers. The number and type of portable fire extinguishers desired shall be specified by the purchaser in the Special Provisions. (See NFPA 10, Standard for Portable Fire Extinguishers.)
4 electric hand lights, 6-volt dry cell or 4-volt wet cell minimums
2 6-ft. pike poles
2 8-ft. pike poles
2 scoop shovels
2 plain shovels
125 ft. rope, 5/8-in. diameter, the grade to be specified by the purchaser in Special Provisions
125 ft. rope, 3/4-in. diameter, the grade to be specified by the purchaser in Special Provisions
4 pompier belts

10-4.1.1 The following list of metal ladders shall apply in addition to the requirements of 10-4.1. Ladders shall conform to the requirements of NFPA 1931, Standard on Design, and Design Verification Tests for Fire Department Ground Ladders. Ladders over 20 ft. shall be truss type. Lengths shall be measured when extended and shall not be the simple sum of the lengths of the sections. Widths shall be consistent with lengths, and extension ladders shall have pawls.

1 40-ft. extension ladder
1 35-ft. extension ladder
1 28-ft. extension ladder
1 20-ft. single ladder with folding roof hooks
1 16-ft. single ladder with folding roof hooks
1 14-ft. extension ladder
1 10-ft. collapsible ladder

Exception No. 1: Where wood ladders are desired, purchaser shall specify in Special Provisions.

Exception No. 2: Where ladders over 20 ft. are to be solid side type, purchaser shall specify in Special Provisions.

10-4.1.2 If apparatus is equipped with an aerial ladder, the following equipment shall be provided in addition to the requirements of 10-4.1.1:

1 ladder pipe suitable for quickly attaching to ladder with 1 1/4-, 1 3/8-, 1 1/2-in. tips
100 ft. of 3-in. double jacket, rubber lined fire hose, coupled
1 2-inlet valved siamese with 3/8-in. minimum diameter drain (2 female, 1 male connections)
1 gated shut-off valve for male outlet on siamese

Exception No. 1: Where 3 inlet clappered siamese or different size is desired, purchaser shall indicate in Special Provisions.

Exception No. 2: Where other size and length of lead hose is desired, purchaser shall indicate in Special Provisions.

10-5. Equipment Carried on Pumper-Ladder Trucks

10-5.1 Basic equipment which shall be provided, unless otherwise specified by purchaser in Special Provisions, shall be that specified in both 10-2.1 and 10-4.1. Where number of items of equipment differ, the larger number shall be required.

10-6. Equipment Carried on Salvage Trucks

10-6.1 The following is a list of basic tools and equipment which shall be carried on salvage trucks:

1 box sprinkler equipment containing:
12 standard sprinkler heads (assorted temperatures and types)
1 set sprinkler head wrenches for the types of heads carried
1 box assorted pipe plugs and caps
3 stillson wrenches, 10-, 14-, and 16-in. sizes
2 monkey wrenches
20 salvage covers
2 floor runners, 3 by 18 ft.
1 roll 15-lb. tar paper or plastic sheeting, at least 8 mil
4 brooms
4 mops
2 mop wringers, with buckets
1 water vacuum cleaner
6 18-in. squeegees with handles
3 scoop shovels
1 submersible pump
2 10-ft. metal ladders with folding roof hooks
2 8-ft. pike poles
125 ft. rope, 1/2-in. diameter, the grade to be specified by the purchaser in Special Provisions
125 ft. rope, 3/8-in. diameter, the grade to be specified by the purchaser in Special Provisions
2 axes (6 lb.)
1 crowbar, 36-in. minimum
2 pinch bars
2 sledge hammers
3 claw hammers
1 box of assorted nails
2 padlocks, keys, and hasps
1 heavy-duty stapler

4 assorted hand saws
1 power saw (chain or heavy-duty rotary type)
1 smoke ejector, 5000 cfm minimum capacity
1 electric generator of at least 2500 watt rating

Exception: Where generator is not portable, additional wire cable is desirable. If built-in wire connections are made to receptacles on the truck, a 3-wire system is recommended with either portable or fixed generator.

3 portable floodlights (500 watt)
5 50-ft. lengths of cable with locking-type connectors, 14-3 gauge or heavier
3 pigtail ground adapters, 2-wire to 3-wire, 14-3 gauge or heavier with 12-in. minimum length
2 100-ft. lengths of cable with locking-type connectors
2 electric hand lights, 6-volt dry cell or 4-volt welt cell minimums
1 first aid kit (24-unit fire department assortment)
2 approved portable fire extinguishers. The variety shall be suitable for use on Class A, B, and C fires. The minimum sizes shall be 20 BC rating in dry chemicals, 10 BC rating in CO_2, and 2 A rating in water-type extinguishers. (See NFPA 10, Standard for Portable Fire Extinguishers.)
1 roll heavy-duty cellophane tape, 2-in. width
1 deodorizer unit, power operated
2 SCBA, positive pressure, NIOSH/MSHA approved, 30 minute or longer rated service life
2 SCBA cylinders, spare for current SCBA

10-7. Equipment Carried on Light Attack Vehicles

10-7.1 Basic equipment for light attack vehicles shall be provided as followed unless otherwise specified by purchaser:

1 pick-head axe, 6 lb.
1 electric hand light, 6-volt dry cell or 4-volt wet cell minimum
1 approved portable fire extinguisher, Class ABC, 10 lb. or equal rating
1 pike pole or plaster hook (6 ft. minimum)
2 SCBA, positive pressure, NIOSH/MSHA approved, 30 minute or longer rated service life
2 SCBA cylinders, spare for current SCBA

Additional Optional Equipment Which Might Be Desirable to Be Carried on Each Ladder Truck

1 distributing or spray type cellar nozzle with applicator
1 roll heavy-duty cellophane tape, 2-in. width
1 50-lb. battering ram or other suitable wall opening device
1 deodorizer unit, power operated
1 life net or pneumatic rescue cushion
1 metal ceiling cutter
1 set of grappling hooks
1 pulldown hook and chain
1 shovel, pointed, long handle

1 each gas and water shutoff wrench
Spare canisters, cylinders, etc., for self-contained breathing apparatus
2 roof covers, minimum 12 by 18 ft.
1 water vacuum cleaner
1 submersible pump
1 block and tackle
1 life gun with ammunition
1 body bag
2 pairs rubber electric gloves
4 bale hooks
2 4-tine forks
2 blankets

Equipment Recommended to Be Carried on Each Ladder Truck in Addition to the Basic Equipment Listed in 10-4.1:

4 hose straps or belts
1 hose or equipment hoist, manual

NOTE: If power type is desired, purchaser shall indicate in Special Provisions.

1 pair bolt cutters, 24-in. minimum
2 12-lb. sledges
2 20-ton hydraulic jacks
2 10-ton hydraulic jacks
1 pair insulated wire cutters capable of cutting No. 6 gauge wire
1 spray nozzle, 500 gpm or larger
2 hydrant wrenches
1 electric generator set of at least 2,500 watt rating

Intent of This Standard

A-10-1.1 It is not the intent of this standard to dictate mandatory equipment as to absolute type, numbers, and the apparatus upon which it might be carried. It is expected that the requirements of service in different communities will necessitate variations from the equipment suggested. While it is recommended that the lists be considered as a minimum, due regard must be given to other highly specialized or multipurpose apparatus, auxiliary apparatus in service, and the use of two-piece companies. The operational objective is to arrive at the scene of the emergency with the necessary equipment for immediate life-safety operations and emergency control. The purchaser should consult with the fire insurance rating organization having jurisdiction before completing apparatus specifications.

Safety

The Florida State Board of Education establishes rules for the operation of public educational institutions. **Part III, Section B, Chapter 6A-2.076 of the State Board of Education Rules** contains the standards for existing educational facilities.

Subsections deal with the entire school facility with regard to such topics as flammable materials; climate control and ventilation equipment; structural, material, and sound hazards; fire extinguishing equipment; surface finishes, decorations, and hazardous materials; storage; separation of spaces; fire doors, smoke doors, and smoke partitions; emergency evacuation drills; detection of fires; alarm and fire notification systems; exit access, exit discharge, means of egress, and occupancy loads; general lighting, illumination of means of egress, emergency lighting, and exit marking; stairs and fire escapes; relocatable buildings; and safety in ships, laboratories, and other process areas.

In addition to the Department of Education rules concerning safety, programs in fire-fighting training should follow the fire prevention and control regulations set forth in Sections 633.05 and 633.051 of the Florida Statutes.

Nothing in subsection 633.05 precludes the Department of Health and Rehabilitative Services from reporting any fire safety standard violations discovered in the course of an inspection to either the fire department or the State Fire Marshal.

Programs in fire-fighting training should also follow the **National Fire Protection Association (NFPA) 1500 Standard** on Fire Department Occupational Safety and Health Program. This standard contains minimum requirements for a fire service related occupational safety and health program, and are applicable to organizations providing fire suppression, rescue, and other emergency services, including public, military, and private fire departments and fire brigades.

Further, NFPA 1403 establishes the Standard on Live Fire Training Evolutions in Structures. It is a basic system that can be adapted to local conditions to serve as a standard mechanism of live fire training. The information contained in this standard is designed to ensure adequate levels of safety while allowing the local organization some flexibility to utilize independent judgment based on local situations and the level of training to be accomplished.

Safety Statement

The provisions set forth in **Chapter 6A-2.076, State Board of Education Rules** and Sections 633.05 and 633.051 of the Florida Statutes are cumulative and shall not be construed as repealing or affecting any other law of this state particularly relating to the regulation of any of the materials or products described within Chapter 633 of the Statutes.

The provisions set forth in the NFPA 1500 standard are not intended to restrict any jurisdiction from exceeding these minimum requirements.

PROGRAM IMPLEMENTATION

This section includes information that may help you implement the Fire Fighting program, such as student admission requirements, the instructional program, additional standards, suggested instructional approach, teaching methods, evaluation criteria, awarding certificates of completion, an explanation of the components of student learning guides, cooperative training, and student organization participation.

Student Admission Requirements

Students enrolled in this program should be able to benefit from the instructional content with reasonable expectations for entry-level employment upon successful completion of the program. (**Note:** See also State Certification Requirements, page 3.)

In accordance with the Course Code Directory, the Fire Fighting Program is offered to students at postsecondary adult vocational grade level 12, 30, and 31.

The minimum age at completion of this program is eighteen. A high school diploma or GED is required, and a physical examination is required. (For special requirements, see State Certification Requirements, p. 3.)

If this program is offered for 450 hours or more, in accordance with Section 233.0695, F.S., students who enroll in this postsecondary adult vocational program shall complete an entry-level examination within the first six weeks after admission to the program.

Any student deemed to lack a minimal level of basic skills shall be referred to vocational preparatory instruction for a structured program of basic skills instruction. Such instruction may include the provision of English as a second language. No such student may receive a certificate of vocational program completion until he or she has demonstrated mastery of the basic skills appropriate for the occupational program as provided by rules adopted by the State Board of Education.

The Instructional Program

Pursuant to Section 633.35, Florida Statutes, the division shall establish a firefighter training program of not less than 240 hours, administered by such agencies and institutions as it approves for the purpose of providing basic employment training for firefighters.

Units of instruction shall provide instruction and learning activities for those competencies identified and required by the Minimum Standards Examination of the Bureau of Fire Standards and Training.

Major Topical Areas		Minimum Hours
(1)	Orientation	4 hours lecture
(2)	Fire Behavior	8 hours lecture

(3)	Portable Extinguishers	3 hours lecture, 2 hours drill
(4)	Protective Breathing Equipment	3 hours lecture, 4 hours drill
(5)	Apparatus and Equipment	2 hours lecture, 2 hours drill
(6)	Tools and Equipment	2 hours lecture, 8 hours drill
(7)	Ladders	3 hours lecture, 12 hours drill
(8)	Hose	6 hours lecture, 36 hours drill
(9)	Fire Streams	10 hours lecture
(10)	Fundamentals of Extinguishment	8 hours lecture
(11)	Private Fire Protection Systems	2 hours lecture
(12)	Forcible Entry	4 hours lecture, 3 hours drill
(13)	Rescue	5 hours lecture, 14 hours drill
(14)	Ventilation	3 hours lecture, 3 hours drill
(15)	Salvage	2 hours lecture, 4 hours drill
(16)	Overhaul	3 hours lecture
(17)	Fire Prevention Inspection	8 hours lecture
(18)	First Responder	20 hours lecture, 20 hours drill
(19)	Physical Fitness	8 hours supervised exercises
(20)	Examinations	13 hours academic and performance
(21)	Controlled Burning	15 hours drill
Total Minimum Required Hours:		**240 hours**

Additional Standards Authorized

Pursuant to Section 633.42 of the Florida Statutes, nothing herein shall be construed to preclude an employing agency from establishing qualifications and standards for hiring, training, or promoting fire fighters that exceed the minimum set by the department.

Suggested Instructional Approach

The instructional content of this vocational program is based on tasks performed and employability skills required on the job. The criteria used for evaluating student performance are determined by job performance standards. Each task to be performed, the conditions under which the student must perform, and the standard by which the performance will be evaluated are made known in explicit terms--in writing--to the student (and to any other interested persons) before instruction. The statement containing this information is often called a performance objective.

Content and pacing decisions are based on the instructional needs of the individual student; that is, on the discrepancies between necessary skills and current skill attainments. Ways of meeting these needs are determined by an assessment of the student's aptitudes, learning styles, and career goals. At any time, different students may be working on different objectives.

Each student is expected to acquire the necessary knowledge and skills to demonstrate, through performance of each task, that he or she has reached the specified standard of performance. Since actual performance is the only reliable proof of competence, successful completion of the program is dependent on the student's demonstrated attainment of the knowledge and skills for which instruction has been provided.

Competency-based vocational education is strongly recommended as the instructional approach to training students in the Fire Fighting program.

Suggested Teaching Methods

Teaching and learning are inseparable, and together they represent an interactive process between the person teaching and the person learning. Learning occurs only if and when the learner exhibits some measurable change in behavior. The following are assumptions pertaining to teachers, learners, and the learning process:

1. Learning is transferable. What is learned in one situation can be transferred to another and used to clarify it.

2. Learning takes place faster when moving from simple to the more complex in an orderly, logical way.

3. Learning takes place faster if the learner recognizes something familiar in a new experience. Each experience serves as a background for future experiences.

4. Learning does not occur singly. Knowledge is influenced by the learner's frame of mind. Attitudes develop towards what is being learned.

5. When a learner sees a charted course geared to specific goals and needs, he or she perseveres.

6. Learning implies activity on the part of the learner.

The instructor implements the course content by designating each skill to be learned and by planning the learning sequence. For example, instruction may consist of a film or live demonstration which reinforces the unit, followed by practice in the learning lab and a performance examination.

Lecture and discussion segments should include times for questions and answers. Students can benefit from regular discussion of "real world" problems encountered in the work-practice situation.

All types of visual aids, whether commercially available or teacher-produced, can be employed to help clarify concepts for the student. When employed, visual aids should be simple and uncluttered.

The student should be provided with a course outline indicating the topics to be covered. The instructor is also encouraged to employ any other handout material needed for clarification of topics.

Supervised student practice, including demonstration and return demonstration, should be an integral part of the program.

Evaluation Criteria

Evaluation of the student's performance in classroom, lab, and clinical situations should be based on:

- quality of work in both written and practical application.
- classroom participation.
- ability to organize and complete assignments.
- ability to perform safely in the clinical area.
- interpersonal relations in the instructional context.

In the classroom and lab, the student will be evaluated by quizzes, tests, and reports; by progress charts; and by skills checklists. In the clinical area, progress charts and skills checklists will be used.

Students are supervised when performing competencies until, in the instructor's judgement, the student is able to function safely with minimum assistance.

Certificate of Completion

A certificate indicating competencies achieved, attendance, and grade level should be awarded to the student upon completion of the program. This can take the form of the Career MAP for the Fire Fighting Program.

Student Learning Guides

As mentioned in the Florida Vocational Education Program Implementation Guide, competency-based vocational instruction (CBVI) is the most appropriate instructional approach to teaching students to become competent fire fighters. In order to implement CBVI effectively and efficiently, you and the students should have access to competency-based instructional materials, such as student guides or modules.

A sample student learning guide is provided in the Appendix as an example for you to use when developing or adapting a set of learning guides or modules. This sample guide, although not complete, presents the basic components of a competency-based student learning guide: an introduction, objectives, list of resources, learning activities, information sheets, self-check and answer sheet, activity sheets, written test, and performance test. An answer key to the written test is included in the instructor version of the learning guide.

The following components are often included in a student learning guide:

The **introduction,** which includes the intended outcome, the SPS for which the guide is developed, and an introduction to the guide stating why this topic is important to study and what this guide is about. (Other information, such as the relationship between this guide and other guides, can also be included on this sheet.)

The **objectives,** which include both knowledge and performance objectives if the SPS calls for hands-on performance, but only knowledge objectives if the SPS requires knowledge-oriented competencies.

The list of **resources,** which includes instructional materials the student should use to study and tools and supplies students should have access to in order to complete this guide.

The **learning activities,** which include a list of steps students should take in order to master the objectives.

An **information sheet,** which may need to be developed if the existing instructional materials do not cover enough content for students to master the objectives.

The **self-check,** which is a set of questions designed to help students review what they have studied.

The **activity sheet,** which is designed to help students practice hands-on tasks for performance objectives. If the SPS does not require hands-on activity, this sheet is not included in the learning guide.

The **written test,** which is used to measure the student's achievement on the knowledge objectives.

The **performance test,** which is designed to be used by the evaluator/instructor to assess the student's level of achievement on the performance objectives.

The student learning guide may consist of two or more sets of the above components if the objectives need to be divided into two or more groups. Whatever format you use for the student learning guide, these components should be included in order to incorporate instructional events such as:

1. gaining attention
2. stating objectives
3. recalling prerequisites
4. providing instructional stimulus
5. providing learning guidance
6. eliciting performance
7. providing feedback
8. assessing performance
9. enhancing retention and transfer

Cooperative Training

The Cooperative On-the-Job Training (OJT) course for Fire Fighting may be taken by a student for one or more semesters. The specific student performance standards that the student should master to earn credit **must be specified in the OJT training plan.** This plan should include a list of OJT and in-school learning experiences and should be signed by the student, instructor, employer, and cooperative program coordinator. Besides the training plan, each student should have access to a work station with relevant tools and equipment that can facilitate the student's mastery of skills, and tasks required for the occupation which the student has chosen as a career goal.

The teacher-coordinator must visit each job site at least once during each grading period for the purpose of evaluating the student's progress in attaining the competencies listed in the training plan.

The student must receive compensation for work performed on the job and may earn multiple credits.

The student should contact his or her principal, Public Service Education Supervisor, or Vocational Education Director for additional information such as the required rules, regulations, guidelines, and forms. This information may include requirements for enrolling in the Cooperative Program, objectives of the program, teacher-coordinator responsibilities, monthly schedules, training plan, employment attendance record, training agreement form, and student skills record.

Student Organization Participation

Vocational student organizations operate pursuant to federal and state laws which authorize them as viable components of vocational education programs. According to federal regulations, the vocational education program of instruction may include activities of vocational student organizations which are an integral part of the vocational instruction offered and which are supervised by vocational education personnel. The Florida Board of Education Rules authorize vocational student organizations as an integral part of the vocational education program (SBER 6A-6.64(7) and 6A-6.65(8)).

Iota Lambda Sigma (ILS) is a professional vocational and industrial education-technology fraternity. Vocational and industrial education includes undergraduate and graduate courses offered for the preparation of the teachers, supervisors, and administrators of Trade and Industrial Education, Industrial Arts, Distributive Education, Technical Education, Business Education, Home Economics, Health Occupations, and other Vocational Education programs and services.

For membership inquiries, contact:

Iota Lambda Sigma
Kappa Chapter
2309 Killarney Way
Tallahassee, FL 32308

PROFESSIONAL DEVELOPMENT

Teacher Certification

Listed below are the certification coverages included in the current Course Code Directory for Fire Fighting:

Grade 12:
FIRE FIGHT 7
FIREMANSHIP @7

Grade 30-31:
PUB SERVICE @7
FIRE FIGHT 7
FIREMANSHIP @7

Other Qualifications

Local education agencies may qualify the teacher to teach Fire Fighting if he or she has fulfilled one or more of the following requirements:

1. The teacher has obtained a regular or temporary Florida teacher's certificate with appropriate coverages.

2. The teacher has been approved by the local school board in accordance with official school policy.

3. The teacher holds a regular or temporary Florida teacher's certificate with other than appropriate coverage, but has met all occupational experience requirements for appropriate certification and has been approved by the local school board to teach out of field.

4. Community college instructors should meet the requirements of the individual college.

Instructor Standards

The National Fire Protection Association (NFPA) 1041, Standard for Fire Service Instructor Professional Qualifications, uses several levels to denote increasing degrees of responsibility: e.g., Fire Service Instructor I, II, III, or IV, the lowest or basic level being I.

This standard identifies the professional levels of competence required of fire service instructors. The purpose of this standard is to provide minimum qualifications for fire service instructors.

It is not the intent of this standard to restrict any jurisdiction from exeeding these minimum requirements.

The NFPA 1403 Standard on Live Fire Training Evolutions in Structures indicates that all instructors shall be deemed qualified to deliver structural fire fighting training by the authority having jurisdiction. The instructor-in-charge shall be responsible for full compliance with this standard. Refer to this standard for specifics.

Technical Updating

For technical and professional updating inservice activities, instructors at high schools and area vocational-technical centers should contact district Teacher Education Center (TEC) and Public Service Education supervisors. Community college instructors should contact the department of program staff development of the individual college.

Additional Standards Authorized

Nothing in Chapter 633 of the Florida Statutes shall be construed to preclude an employing agency from establishing qualifications and standards for hiring, training, or promoting fire fighters that exceed the minimum set by the department.

Related Professional Organizations and Support Services

Department of Health and Rehabilitative Services
Emergency Medical Services Section
1317 Winewood Boulevard
Tallahassee, FL 32301
(904) 487-1911

Federal Emergency Management Agency
National Fire Academy
16825 South Seton Avenue
Emmitsburg, MD 21727
(301) 447-1123

Fellowship of Christian Firefighters, International
P. O. Box 9324
Denver, CO 80209

Florida Bureau of Fire Standards and Training
1501 West Silver Springs Boulevard
Ocala, FL 32675
(904) 732-0526

Florida State Firemen's Association, Inc.
Highway 27 South at Robinette Road
P. O. Box 968
Avon Park, FL 33825

Florida Vocational Association
1420 North Paul Russell Road
Tallahassee, FL 32301
(904) 878-6860

International Association of Fire Fighters
1750 New York Avenue, NW
Washington, DC 20006

International Fire Service Training Association
Fire Protection Publications
Oklahoma State University
Stillwater, OK 74078-0118
(405) 624-5723

International Society of Fire Service Instructors
20 Main Street
Ashland, MA 01721
(617) 881-5800

National Fire Protection Association
Batterymarch Park
Quincy, MA 02269-9904
(800) 344-3555

Rubber Manufacturers Association Publication Desk
1400 K Street
New York, NY 10018

Society of Fire Protection Engineers
60 Batterymarch Street
Boston, MA 02110
(617) 482-0686

Society of Fire Protection Technicians
P. O. Box 43
Claymont, DE 19703

INSTRUCTIONAL RESOURCES

The following resources are grouped by medium and type: print materials, audio-visual aids, computer courseware, and sources for instructional resource materials. Gathered through a search of data bases and through contact with several leading instructors in fire fighting programs, the materials have been neither extensively reviewed nor selected by a set of criteria; thus, they should be considered as "suggested" rather than "recommended."

Print Materials

Cordell, Curtis C., et al. Training Effectiveness Evaluation (TEE) of the Advanced Fire Fighting Training System. Focus on the Trained Person. (ED 227266). Naval Training Analysis and Evalution Group, Orlando, Fla., 1983.

Curriculum Publications Clearinghouse. Fire Fighter. Curriculum Publications Clearinghouse, Western Illinois University, 46 Horrabin Hall, Macomb, Ill. 61455, 1979.

EDRS. Fire Protection Specialist. AFSC 57150. EDRS, 3900 Wheeler Avenue, Alexandria, Va. 22304-5110, 1979.

EDRS. Fire Protection Specialist. 3ABR57130. EDRS, 3900 Wheeler Avenue, Alexandria, Va. 22304-5110, 1975.

Education, Office of. Fire Protection Specialist, Blocks IV and V, 17-3, Military Curriculum Materials for Vocational and Technical Education. (ED 225011). Office of Education, Washington, D.C., 1978.

Education, Office of. Fire Protection Specialist, Blocks I, II, & III, 17-2, Military Curriculum Materials for Vocational and Technical Education. (ED 225010). Office of Education, Washington, D.C., 1978.

Eenigenburg, James E. User's Guide to Calculating Rate of Fire Spread by Hand-Held Calculator. North Central Forest Experiment Station, St. Paul, Minn., 1983.

Fire Administration. High-Rise Fire Protection Procedures. Fire Administration, Washington, D.C., 1981.

Florida Department of Education. Fire Fighter (PS 031 BK 83). Dissemination Unit; Division of Vocational, Adult, and Community Education; Department of Education, Knott Building, Tallahassee, Fla. 32301-8101, 1983.

Hixson, Bruce (Ed). Recent Additions to the General College Career Development Program Offerings. (ED 213293). General Coll., Minnesota University, Minneapolis, Minn., 1981.

Instructional Materials Lab. Fire Service Training Learner's Modules. Instructional Materials Business Lab, Business Office, 1986.

Instructional Materials Lab. Fire Training Workbook. Instructional Materials Lab., Business Office, 1986.

Instructional Materials Lab. Fire Service Training Instructor's Manual. Instructional Materials Lab, Business Office, 1986.

Instructional Materials Lab. Public Safety Services. Instructional Materials Lab, Business Office, n.d.

Instructional Materials Laboratory. Fire Service Training Instructor's Manual. Instructional Materials Laboratory, The Ohio State University, 842 West Coodale Boulevard, Columbus, Ohio 43212, 1986.

Instructional Materials Laboratory. Fire Service Training Instructor's Manual. Instructional Materials Laboratory, 842 West Goodale Boulevard, Columbus, Ohio 43212, 1986.

Instructional Materials Laboratory. Fire Service Training Workbook Answers. Instructional Materials Laboratory, 842 West Goodale Boulevard, Columbus, Ohio 43212, 1986.

Instructional Publications Unit-G-390. Physical Conditioning for Emergency Services Careers. SC-760. Instructional Publications Unit-G-390, Los Angeles Unified School District, 450 North Grand Avenue, Los Angeles, Calif. 90012, n.d.

International Society of Fire Service Instructors. 1987-1988 Catalog of Products and Seminars for Professional Excellence. Institute for Life Safety Technology and Emergency Management Education, 20 Main Street, Ashland, Mass. 01721, n.d.

Kominski, John, et al. Fire Prevention and Safety: A Teacher's Handbook, 1986-87. (ED 282956). New York Division of Curriculum and Instruction, New York City Borard of Education, Brooklyn, N.Y., 1986.

Mine Safety and Health Administration. MSHA Approved Mine Rescue--Training Module (Metal/Nonmetal): Fires, Firefighting, and Explosions. Mine Safety and Health Administration, Arlington, Va., 1984.

Mine Safety and Health Administration. MSHA Approved Mine Rescue--Training Module (Coal): Fires, Firefighting, and Explosions. Mine Safety and Health Administration, West Virginia University, Morgantown, Mining Extension Service, 1984.

Minnesota Curriculum Services Center. Fire Fighter I Curriculum. B0701. Minnesota Curriculum Services Center, 3554 White Bear Avenue, White Bear Lake, Minn. 55110, n.d.

Minnesota Curriculum Services Center. Fire Fighter II Curriculum. B0702A. Minnesota Curriculum Services Center, 3554 White Bear Avenue, White Bear Lake, Minn. 55110, n.d.

Minnesota Curriculum Services Center. Fire Fighter II Workbook. B0702B. Minnesota Curriculum Services Center, 3554 White Bear Avenue, White Bear Lake, Minn. 55110, n.d.

Minnesota Curriculum Services Center. Fire Apparatus Operator I. B0703. Minnesota Curriculum Services Center, 3554 White Bear Avenue, White Bear Lake, Minn. 55110, n.d.

Minnesota Curriculum Services Center. Public Fire Education Planning. B075A. Minnesota Curriculum Services Center, 3554 White Bear Avenue, White Bear Lake, Minn. 55110, n.d.

Minnesota Curriculum Services Center. Conducting Basic Fire Prevention Inspections Instructor's Guide. B0759A. Minnesota Curriculum Services Center, 3554 White Bear Avenue, White Bear Lake, Minn. 55110, n.d.

Minnesota Curriculum Services Center. Conducting Basic Fire Prevention Inspections Student Manual. B0760. Minnesota Curriculum Services Center, 3554 White Bear Avenue, White Bear Lake, Minn. 55110, n.d.

Minnesota Curriculum Services Center. Fire Service Management I. B0763A. Minnesota Curriculum Services Center, 3554 White Bear Avenue, White Bear Lake, Minn. 55110, n.d.

Minnesota Curriculum Services Center. Fire Service Management I. B0763B. Minnesota Curriculum Services Center, 3554 White Bear Avenue, White Bear Lake, Minn. 55110, n.d.

Minnesota Curriculum Services Center. Introduction to Wildland Fire Suppression for Rural Fire Department. B0765A; B0765B. Minnesota Curriculum Services Center, 3554 White Bear Avenue, White Bear Lake, Minn. 55110, n.d.

Minnesota Curriculum Services Center. Recognizing and Identifying Hazardous Materials. B0767. Minnesota Curriculum Services Center, 3554 White Bear Avenue, White Bear Lake, Minn. 55110, n.d.

Minnesota Curriculum Services Center. Hazardous Materials, The Pesticide Challenge. B0768. Minnesota Curriculum Services Center, 3554 White Bear Avenue, White Bear Lake, Minn. 55110, n.d.

Minnesota Curriculum Services Center. Hazardous Materials Incident Analysis. B0769. Minnesota Curriculum Services Center, 3554 White Bear Avenue, White Bear Lake, Minn. 55110, n.d.

National Center for Research in Vocational Education. Fire Protection Specialist, Blocks IV and V, 17-3, Military Curriculum Materials for Vocational and Technical Education. (ED 225011). National Center for Research in Vocational Education, Ohio State University, Columbus; Chanute AFB Technical Training Center, Ill., 1978.

National Center for Research in Vocational Education. Fire Protection Specialist, Blocks I, II, and III, 17-2, Military Curriculum Materials for Vocational and Technical Education. (ED 225011). National Center for Research in Vocational Education, Ohio State University, Columbus, 1978.

National Center for Research in Vocational Education. Military Curriculum Materials for Vocational and Technical Education. Fire Protection Specialist. (CDC 57150, 17-12). National Center for Research in Vocational Education, 1978.

Noriyama, Bruce, and Brumley, Leslie. Miramar College Program Evaluation: Fire Science. (ED 196460). San Diego Community College District, Calif., 1980.

Pribyl, Paul F. Fire Behavior, Fire Service Certification Series, Unit FSCS-FF-3-80. (ED 221722). Wisconsin Board of Vocational, Technical, and Adult Education, 1980.

Pribyl, Paul F. Your Fire Department, Organization-Recruitment-Equipment-Training, Revised. (ED 221739). Wisconsin Board of Vocational, Technical, and Adult Education, 1978.

Pribyl, Paul F. Fire Prevention Inspection Procedures. (ED 221738). Wisconsin Board of Vocational, Technical, and Adult Education, 1980.

Pribyl, Paul F. Fire Officer I Lesson Plans. (ED 221737). Wisconsin Board of Vocational, Technical, and Adult Education, 1980.

Pribyl, Paul F. Fire Fighter Level I-II-III Practical Skills Test, Wisconsin Fire Service Certification Series, Final Revision. (ED 221736). Wisconsin Board of Vocational, Technical, and Adult Education, 1980.

Pribyl, Paul F. Inspection, Fire Service Certification Series, Unit FSCS-FF-17-81. (ED 221735). Wisconsin Board of Vocational, Technical, and Adult Education, 1981.

Pribyl, Paul F. Communications, Fire Service Certification Series, Unit FSCS-FF-16-81. (ED 221734). Wisconsin Board of Vocational, Technical, and Adult Education, 1981.

Pribyl, Paul F. Salvage and Overhaul, Fire Service Certification Series, Unit FSCS-FF-15-81. (ED 221733). Wisconsin Board of Vocational, Technical, and Adult Education, 1981.

Pribyl, Paul F. Rescue, Fire Service Certification Series, Unit FSCS-FF-14-81. (ED 221732). Wisconsin Board of Vocational, Technical, and Adult Education, 1981.

Pribyl, Paul F. Ventilation, Fire Service Certification Series, Unit FSCS-FF-13-81. (ED 221731). Wisconsin Board of Vocational, Technical, and Adult Education, 1981.

Pribyl, Paul F. Forcible Entry, Fire Service Certification Series, Unit FSCS-FF-12-80. (ED 221730). Wisconsin Board of Vocational, Technical, and Adult Education, 1980.

Pribyl, Paul F. Sprinklers/Standpipes/Detection Systems, Fire Service Certification Series, Unit FSCS-FF-11-80. (ED 221729). Wisconsin Board of Vocational, Technical, and Adult Education, 1980.

Pribyl, Paul F. Fire Streams, Fire Service Certification Series, Unit FSCS-FF-10-80. (ED 221728). Wisconsin Board of Vocational, Technical, and Adult Education, 1980.

Pribyl, Paul F. Water Supply, Fire Service Certification Series, Unit FSCS-FF-9-80. (ED 221727). Wisconsin Board of Vocational, Technical, and Adult Education, 1980.

Pribyl, Paul F. Fire Hose, Nozzles and Appliances, Fire Certification Series, Unit FSCS-FF-80. (ED 221726). Wisconsin Board of Vocational, Technical, and Adult Education, 1980.

Pribyl, Paul F. Ladders, Fire Service Certification Series, Unit FSCS-FF-7-80. (ED 221725). Wisconsin Board of Vocational, Technical, and Adult Education, 1980.

Pribyl, Paul F. Protective Breathing Apparatus, Fire Service Certification Series, Unit FSCS-FF-6-80. (ED 221724). Wisconsin Board of Vocational, Technical, and Adult Education, 1980.

Pribyl, Paul F. Portable Extinguishers, Fire Service Certification Series, Unit FSCS-FF-4-80. (ED 221723). Wisconsin Board of Vocational, Technical, and Adult Education, 1980.

Pribyl, Paul F. Fire Behavior, Fire Service Certification Series, Unit FSCS-FF-3-80. (ED 221723). Wisconsin Board of Vocational, Technical, and Adult Education, 1980.

Pribyl, Paul F. Safety, Fire Service Certification Series, Unit FSCS-FF-2-80. (ED 221721). Wisconsin Board of Vocational, Technical, and Adult Education, 1980.

Pribyl, Paul F. Fire Service Certification Series, General/Orientation, Unit FSCS-FF-1-80. (ED 221720). Wisconsin Board of Vocational, Technical, and Adult Education, 1980.

Pribyl, Paul F. Rope Practices, Fire Service Certification Series, Unit FSCS-FF-5-80. (ED 221719). Wisconsin Board of Vocational, Technical, and Adult Education, 1980.

Pribyl, Paul F. Wisconsin Fire Service Certification Program Procedures. (ED 221718). Wisconsin Board of Vocational, Technical, and Adult Education, 1980.

Tallahassee Fire Department. Tallahassee Fire Department Training Division Fire Service Training Aids Catalog. Tallahassee Fire Department, 327 North Adams Street, Tallahassee, Fla. 32301, n.d.

Vocational Curriculum Laboratory. Competency-Based Education Curriculum for Firefighter Training. (ED 203 016). Vocational Curriculum Laboratory, 1981.

Weisman, Herman M., Lynch, John, and Goodrich, Lyle. Arson Control Guide for Volunteer Fire Departments. Fire Administration, Washington, D.C., 1981.

West Virginia Department of Education. Competency-Based Education Curriculum for Firefighting Training. (ED 203016). West Virginia State Department of Education, Charleston, W. Va., 1981.

West Virginia Vocational Curriculum Laboratory. Firefighter. West Virginia Vocational Curriculum Laboratory, 1979.

West Virginia Vocational Curriculum Laboratory. Firefighter Training. West Virginia Curriculum Laboratory, Cedar Lakes Conference Center, Ripley, W. Va. 25271, 1981.

West Virginia Vocational Curriculum Laboratory. Prevocational Exploration Public Service. West Virginia Vocational Curriculum Laboratory, Cedar Lakes Conference Center, Ripley, W. Va. 25271, 1982.

Western Curriculum Coordination Center. Competency-based Common-core Curriculum for Fire Science Education. Western Curriculum Coordination Center, 1776 University Avenue, Wist 216., Honolulu, Hawaii 96822, 1979.

Audiovisual Materials

Alarm. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Alarming Problem, The. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Automatic Sprinklers--The Myths and the Magic. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Closed Containers and Fires. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Communication. Civic Supply Co. (CIVICS).

Community Representation on the Planning Committee. B0756. Minnesota Curriculum Services Center.

Conducting Basic Fire Prevention Inspections--Student Materials. National Audiovisual Center, 1983.

Conducting Basic Fire Prevention Inspections. National Audiovisual Center, 1983.

Conducting Basic Fire Prevention Inspections. B0759B. Minnesota Curriculum Services Center.

Coordinated Fire Attack. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

The Disorderly Worker. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Fighting Fires with Portable Extinguishers. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Fighting Petroleum Storage Fires. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Finance Chief. National Audiovisual Center, 1981.

Fire Aboard Pleasure Boats. National Audiovisual Center, 1980.

Fire Apparatus--Preparation. Film Communicators (FILCOM), 11136 Weddington Street, North Hollywood, Calif. 916091.

Fire Behavior. U.S. National Audiovisual Center (USNAC).

Fire Brigade Operations. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Fire Business Management Principles--Student Materials. National Audiovisual Center, 1982.

Fire Business Management Principles. National Audiovisual Center, 1982.

Fire Fighting Training--A Series. Leighton & Kidd Limited Consulting Engineers (LEIKID).

Fire Fighting and Electricity. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Fire Hazards of Covered Shopping Centers. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Fire in 1117. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Fire in America. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Fire on the Rig, Part 1--Fire Fighting Tactics on Offshore Rigs. University of Texas at Austin, Petroleum Service (UTEXPE).

Fire Prevention and Control. National Audiovisual Center, 1982.

Fire Prevention--Know Your Fire Hazards. National Audiovisual Center, 1958.

Fire Protection Training--A Series. Industrial Training Corporation (ITCORP).

Fire Response. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Fire Science/Fire Equipment. Leighton & Kidd Limited Consulting Engineers (LEIKID).

Fire Service Supervision: Increasing Personal Effectiveness. National Audiovisual Center, 1985.

Fire Service Supervison: Increasing Personal Effectiveness--Student Materials. National Audiovisual Center, 1985.

Fire Service Supervison: Increasing Team Effectiveness--Student Materials. National Audiovisual Center, 1985.

Fire Service Supervisor: Increasing Team Effectiveness. National Audiovisual Center, 1985.

Fire Weather. National Audiovisual Center, 1964.

Fire vs. Fire. National Audiovisual Center, 1966.

Fire! High-Rise Evacuation. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Fire/Arson Detection--Student Materials. National Audiovisual Center, 1982.

Fire: Concepts and Behavior. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Fire: Countdown to Disaster. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Firefighter I. National Audiovisual Center, 1982.

Five Minutes for Survival. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Five Problems in Communication. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Flammable Liquid Fire Safety. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Forgetter, The. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Gasoline Tank Truck Fire Emergencies. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

General Qualifications. International Fire Service Training Association (IFSTA).

Good Health through Physical Fitness. Los Angeles Fire Department, 200 North Main Street, Los Angeles, Calif. 90012.

Great Chelsea Fire, The. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Hands at Work. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Hazardous Materials Incident Analysis--Instructor Package. National Audiovisual Center, 1984.

Hazardous Materials Incident Analysis--Student--Student Materials. National Audiovisual Center, 1984.

Hazardous Materials: The Pesticide Challenge--Instructor Package. National Audiovisual Center, 1984.

Hazardous Materials: The Pesticide Challenge--Student Materials. National Audiovisual Center, 1984.

Health-Care Fire Safety. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

High Risk Factors. B0757. Minnesota Curriculum Services Center.

High-Rise Building Problems. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

High-Rise Pre-Fire Planning. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

History of Public Fire Education. B0755. Minnesota Curriculum Services Center.

How to Size Up Residential Fires. Civic Supply Co. (CIVICS).

Hydraulics for the Fire Service--A Series. National Fire Protection Association (NFPA).

Instructional Techniques for Company Officers. National Audiovisual Center, 1983.

Instructional Techniques for Company Officers--Student Materials. National Audiovisual Center, 1983.

Interior Firefighting (Italian). Gulf Publishing CoVideo (GPCV).

Interior Firefighting (Korean). Gulf Publishing CoVideo (GPCV).

Interior Firefighting. Gulf Publishing CoVideo (GPCV).

Introduction to Fire Behavior for Individual Study--Student Materials. National Audiovisual Center, 1982.

Introduction to Fire Behavior--Student Materials. National Audiovisual Center, 1977.

Introduction to Fire Behavior. National Audiovisual Center, 1977.

It's up to You, Charley. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Know Your Fire Hazards. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Know Your Sprinkler System. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

LP Gas: Emergency Planning and Response. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Ladders. International Fire Service Training Association (IFSTA).

Learning Fire Weather. National Audiovisual Center, 1977.

Making of a Fire Fighter, The. Los Angeles Fire Department. Film Communicators (FILCOM), 11136 Weddington Street, North Hollywood, Calif. 916091.

NFPA Fire Away Series. B0761. Minnesota Curriculum Services Center.

Nuclear Power Plant Fire Fighting. Leighton & Kidd Limited Consulting Engineers (LEIKID).

Polyurethane Foam Fire Risks in Industry. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, CA.

Pre-Plan Your Fires. Civic Supply Co. (CIVICS).

Public Fire Education Planning Overview. B0754. Minnesota Curriculum Services Center.

Public Fire Education Planning--Resource Catalog. National Audiovisual Center, 1983.

Public Fire Education Planning. National Audiovisual Center, 1983.

Public Fire Education Planning. B0752B. Minnesota Curriculum Services Center.

Public Fire Education Specialist. B0758. Minnesota Curriculum Services Center.

Ready for Fire? Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Recognizing and Identifying Hazardous Materials--Student Materials. National Audiovisual Center, 1984.

Recognizing and Unifying Hazardous Materials--Instructor Package. National Audiovisual Center, 1984.

Refinery and Petrochemical Plant Fire Fighting. Leighton & Kidd Limited Consulting Engineers (LEIKID).

Rescue Team Alert. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Safety Chief--Student Materials. National Audiovisual Center, 1981.

Safety Chief. National Audiovisual Center, 1981.

Stored Plastics. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Story of a Hospital Fire. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Strategy of Crisis Response. National Audiovisual Center, 1983.

Tallahassee Fire Department Training Division Fire Service Training Aids Catalog. Tallahassee Fire Department, 327 North Adams Street, Tallahassee, Fla. 32301.

Ten Standard Fire Fighting Orders. National Audiovisual Center, 1977.

Using Fire Extinguishers the Right Way. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

Ventilation. National Fire Protection Association. Film Communicators (FILCOM), 11136 Weddington Street, North Hollywood, Calif. 91601.

Volunteer Fire Service Management--Student Materials. National Audiovisual Center, 1982.

Volunteer Fire Service Management. National Audiovisual Center, 1982.

When Fires Start. Film Library, Greater Los Angeles Chapter, National Safety Council, 616 S. Westmoreland Ave., Los Angeles, Calif.

You Must Be Better Than the Big City Fireman. Civic Supply Co. (CIVICS).

Computer Courseware

ASCOS (Analysis of Smoke Control Systems). Society of Fire Protection Engineers.

ASET (Available Safe Egress Time). Society of Fire Protection Engineers.

ASET-B. Society of Fire Protection Engineers.

Computer Simulation of Aircraft Evacuation with Fire. National Aeronautics and Space Administration, Washington, D.C., 1983.

DETACT-QS. Society of Fire Protection Engineers.

Fire. Les Martin, North Bend High School, 14th and Pacific Streets, North Bend, Oreg. 97459, 1983.

Micro-Behcon. Les Martin, North Bend High School, 14th and Pacific Streets, North Bend, Oreg. 97459, 1983.

Public Safety. Exploring Career Options Series. Intellectual Software, 798 North Avenue, Bridgeport, Conn. 06606, n.d.

Rodriguez, R. C. and Johnson, R. P. Emergency Management Computer-Aided Trainer (EMCAT). National Aeronautics and Space Administration, Washington, D.C., 1986.

Sources for Instructional Resource Materials

Printed Materials

Bureau of Fire Standards and Training
1501 Southwest Broadway
Ocala, FL 32670

Curriculum Publications Clearinghouse
Western Illinois University
46 Horrabin Hall
Macomb, IL 61455

EDRS
3900 Wheeler Avenue
Alexandria, VA 22304-5110

Florida Department of Education
Division of Vocational, Adult, and Community Education
Dissemination Unit
Knott Building
Tallahasseee, FL 32301-8101

Instructional Materials Laboratory
842 West Goodale Boulevard
Columbus, OH 43212

International Fire Service Training Association
Fire Protection Publications
Oklahoma State University
Stillwater, OK 74078-0118

International Society of Fire Service Instructors
20 Main Street
Ashland, MA 01721

Minnesota Curriculum Services Center
3554 White Bear Avenue
White Bear Lake, MN 55110

Society of Fire Protection Engineers
60 Batterymarch Street
Boston, MA 02110

Tallahassee Fire Department
Training Division
327 North Adams Street
Tallahassee, FL 32301

Vocational Curriculum Laboratory
Cedar Lakes Conference Center
Ripley, WV 25271

West Virginia Vocational Curriculum Laboratory
Cedar Lakes Conference Center
Ripley, WV 25271

Wisconsin Board of Vocational, Technical, and Adult Education
P. O. Box 7874
4802 Sheboygan Avenue
Seventh Floor
Madison, WI 53707

Audiovisual Materials

Bureau of Fire Standards and Training
1501 Southwest Broadway
Ocala, FL 32670

Civic Supply Co. (CIVICS)
P. O. Box 388
Cape Girardeau, MO 63701

Film Communications (FILCOM)
11136 Weddington Street
North Hollywood, CA 91601

Film Library
Greater Los Angeles Chapter
National Safety Council
616 South Westmoreland Avenue
Los Angeles, CA 90005

Gulf Publishing Co. Video (GPCV)
P. O. Box 26081
Houston, TX 77001

Industrial Training Corp. (ITCORP)
14616 Southlawn Lane
Rockville, MD 20850

Intellectual Software
798 North Avenue
Bridgeport, CT 06606

International Fire Service Training Association (IFSTA)
Oklahoma State University
Stillwater, OK 74078

International Society of Fire Service Instructors
20 Main Street
Ashland, MA 01721

Leighton & Kidd Limited Consulting Engineers (LEIKID)
121 Kennedy Avenue
Toronto, Canada M6S 2X8

Martin, Les
North Bend High School
14th and Pacific Streets
North Bend, OR 97459

Minnesota Curriculum Services Center
3554 White Bear Avenue
White Bear Lake, MN 55110

National Audiovisual Center
National Archives and Records Administration
Customer Services Section PY
8700 Edgeworth Drive
Capitol Heights, MD 20743-3701

National Fire Protection Association (NFPA)
470 Atlantic Avenue
Boston, MA 02210

Society of Fire Protection Engineers
60 Batterymarch Street
Boston, MA 02110

Tallahassee Fire Department
Training Division
327 North Adams Street
Tallahassee, FL 32301

U.S. National Audiovisual Center (USNAC)
General Services Administration
Washington, DC 20409

University of Texas at Austin
Petroleum Service (UTEXPE)
Balcones Research Center 2
10100 Burnet Road
Austin, TX 78758

FEIS Service

If you need (1) information about copyright; (2) a list of instructors teaching in Fire Fighting programs in Florida; (3) journal articles or project reports on specific topics; (4) curriculum and instructional materials; or (5) information on current trends, issues, and research, please contact the Florida Educational Information Service (FEIS), The Center for Instructional Development and Services, College of Education, Florida State University, 2003 Apalachee Parkway, Tallahassee, Florida 32301, (904) 487-2054. FEIS will tailor its service to meet your needs on information concerning resource materials.

APPENDIX

Sample Student Learning Guide

STUDENT LEARNING GUIDE

Program: Public Service Occupations

Topic: Ladders/Extension

Outcome: Use Ladders

Introduction: Using ladders is a Florida Department of Education outcome (12.0) that is performed in fire fighting. The Outcomes and Student Performance Standards (SPSs) outlined in the Florida Curriculum Framework have been adapted from the National Fire Protection Association Fire Fighter Professional Qualifications (NFPA 1001) for Fire Fighter I and II, as regulated by the Florida Bureau of Fire Standards and Training, Florida Statutes 633, and State Fire Marshal Rules.

In this learning guide the content includes, but is not limited to, identifying each type of ladder and defining its use (SPS 12.01); operating as an individual and as a member of a team, demonstrating the following ladder carries: (a) one-person carry, (b) two-person carry, (c) three-person carry, (d) four-person carry, (e) five-person carry, and (f) six-person carry (SPS 12.02); operating as an individual and as a member of a team, raising each type and size of ground ladder using several different raises for each ladder (SPS 12.03); and climbing the full length of each type of ground and aerial ladder (SPS 12.04); carrying fire fighting tools or equipment while ascending and descending (SPS 12.05).

This learning guide satisfies the following NFPA 1001 Fire Fighter Professional Qualifications:

Section 3-9; subsections 3-9.1--3-9.8
Section 4-9; subsections 4-9.1--4-9.3

and Florida State Fire College requirements for Fire Fighter I and II level, Ladders.

OBJECTIVES

Knowledge Objectives

At the end of this learning guide, you will be able to:

1. Identify ladder terms and the NFPA standard for fire service ground ladders.
2. Identify types of ladders.
3. Identify types of ladder design and construction.
4. Identify and describe procedures for cleaning and inspecting ground ladders.
5. Identify and describe the preliminary methods and skills needed to obtain speed and accuracy in raising ladders.
6. Identify and describe types of ladder carries and raises.
7. Review, identify, and take notes on various sizes/types of ladders.
8. Define relevant fire service terms.
9. Identify ladder nomenclature.

Performance Objective

To show that you have mastered this learning outcome,

You will be given: a maximum time limit of 3 minutes, full protective clothing with SCBA on, and a 24' extension ladder placed on the fire truck approximately 25' from the building to be laddered.

You must: demonstrate the proper procedure for removing and carrying the ladder to the designated site, and then demonstrate the proper procedure for raising and completely extending the ladder.

Your performance will be checked as adequate, through instructor observation during practical drill, based on how well you perform on the nine items listed below and by successfully passing a written test.

1. Remove and place roof ladder in a safe place. Find balance point on the 24' extension and remove from unit.
2. Walk toward building, lowering the butt, and lightly place ladder flat on ground with both sections down and heel against building.

3. Face away from building, grasp the second rung from top, pivot under ladder, and raise it hand over hand against building.

4. While standing at side of ladder, using the elbow against hip technique as a fulcrum, bring ladder out from building to the proper distance.

5. Place one foot at the heel of one beam, and with the instep, knee, and leg, steady the ladder by the beam.

6. Watching the top of ladder for balance obstruction and hazards, grasp the halyard and extend the fly section with hand-over-hand motion to proper elevation.

7. Make sure ladder locks are in place and gently allow fly section to make contact with building.

8. Plumb and set ladder (approximately 75-degree angle) and secure halyard with a clove hitch and half hitch.

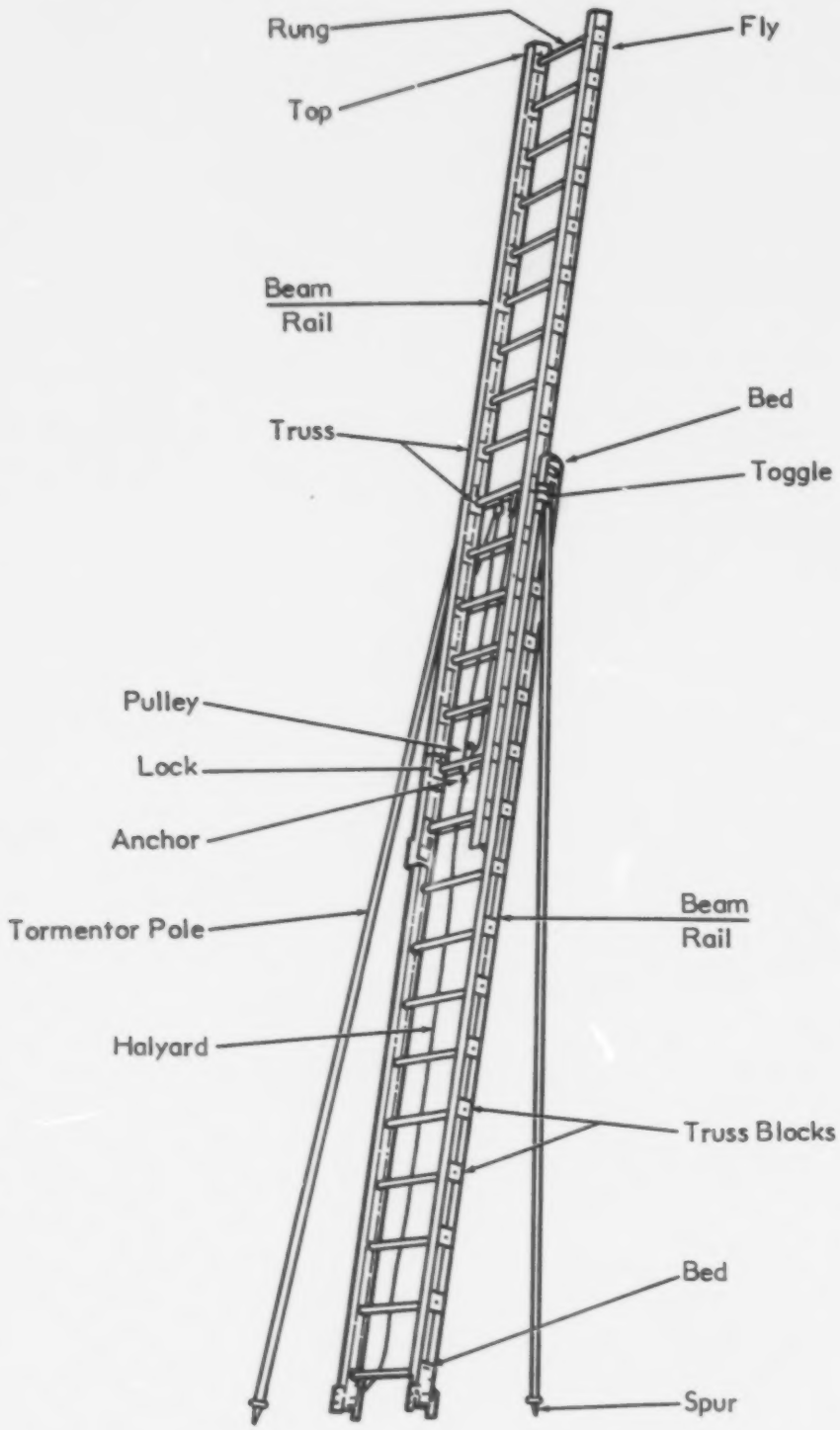
9. A one-point deduction will be made for each three seconds over three minutes.

LEARNING ACTIVITIES FOR KNOWLEDGE OBJECTIVES 1-9

Objectives	Learning Activities
Objective 1	
Identify ladder terms and the NFPA standard for fire service ground ladders.	1. Read NFPA document No. 1931, "Fire Department Ground Ladders," which provides specifications on fire service ground ladders, to identify the standard. 2. Read IFSTA document No. 200, "Essentials of Fire Fighting" (1st edition), pages 37-39, to identify ladder terms.
Objective 2	
Identify types of ladders.	Read IFSTA document No. 200, pages 39-40.
Objective 3	
Identify types of ladder design and construction.	Read IFSTA document No. 200, pages 40-41.
Objective 4	
Identify and describe procedures for cleaning and inspecting ground ladders.	Read IFSTA document No. 200, pages 41-42.
Objective 5	
Identify and describe the preliminary methods and skills needed to obtain speed and accuracy in raising ladders.	Read IFSTA document No. 200, pages 42-47.
Objective 6	
Identify and describe types of ladder carries and raises.	Read IFSTA document No. 200, pages 49-95.

Objectives	Learning Activities
Objective 7 Review, identify, and take notes on various sizes/types of ladders.	1. Listen to a 3-hour lecture presentation on "Ladders" to review, identify, and take notes on ladder essentials. 2. View video #116, "Ladders," and #152, "Ladders/Aerial Apparatus," on resource shelf to review, identify, and take notes on various sizes/types of ladders.
Objective 8 Define relevant fire service terms.	Read the Handout, "Fire Service Terms," on resource shelf.
Objective 9 Identify ladder nomenclature.	Read the Handout, "Fire Service Ladder Practices," on resource shelf.
Objectives 1-9	1. Do the Fire Service Ladder Practices Self-Check, and check your answers (pages 66-67). 2. Take the written examination.

Fire Service Ladder Practices: Handout



Fire Service Ladder Practices: Handout

Ground Ladder--A descriptive term used to distinguish between ladders raised on the ground and those raised from the apparatus

Straight Ladder--A ladder with one section

Extension Ladder--A ladder with two or more sections

Tormentor Poles--The poles which are attached to long extension ladders

Toggle--A device by which a tormentor pole is attached to a ladder

Spurs--Metal points at the lower end of tormentor poles

Bed or **Main**--The lower section of an extension ladder

Fly--The upper section or top sections of an extension ladder

Heel or **Butt**--The bottom or ground end of a ladder

Heel Plates--Metal safety plates attached to the heel of a ground ladder to stabilize the ladder and protect the beam

Safety Shoes--Rubber or neoprene spike plates, usually of the swivel type, attached to the heel of a ground ladder

Top or **Tip**--The extreme top of a ladder

Beam--One of two principle structural sides of a ladder

Truss--An assembly of beam members, so combined as to form a rigid framework

Rails--The two lengthwise members of a trussed ladder beam which are separated by truss or separation blocks

Hooks--Curved, sharp, metal devices (two in number) which fold outward from each beam at the top end of a roof ladder

Rungs--Cross members (usually round) between the beams, on which people climb

Halyard--A rope used for hoisting fly sections

Pulley--A small grooved wheel through which the halyard is drawn

Lock--Metal devices used to hold the fly section in place after it has been extended (also referred to as **pawl** or **dog**)

Truss Blocks--Separation pieces between the rails of a trussed ladder. Sometimes used to support rungs

Braces--Diagonal members between the rails and blocks

Stops--Wood or metal pieces which prevent the fly section from being extended too far

Guides--Wood or metal strips on an extension ladder which guide the fly section while being raised (sometimes in the form of slots or channels)

Tie Rods--Metal rods running from one beam to the other

Beam Bolts--Bolts which pass through both rails at a truss block of a wood ladder

Protection Plates--Plates fastened to a ladder to prevent wear at points where it comes in contact with mounting brackets

Anchor--That part of the ladder which is used to attach the halyard rope to the ladder

Ladder Definitions

All of the various types of fire service ladders have a purpose. Many of them, however, are more adaptable to a specific function than they are to general use. Their identifying name is often significant of the use to which they are applied and fire fighters frequently make reference to them by association. The definitions which follow are offered to more clearly identify fire service ladders.

Pompier Ladders

The pompier ladder consists of a single beam through which rungs project. It has a large gooseneck hook at the tip. At one time the pompier ladder was used by fire fighters to reach upper stories of tall buildings, but their use has since diminished greatly.

FIRE SERVICE LADDER PRACTICES SELF-CHECK

Match the following terms with the list of definitions provided:

1. ( ) Extension Ladder
2. ( ) Main or Bed
3. ( ) Fly
4. ( ) Heel or Butt
5. ( ) Beam
6. ( ) Truss
7. ( ) Halyard
8. ( ) Stops
9. ( ) Hooks
10. ( ) Pawl, Lock, or Dog

a. Wood or metal pieces which prevent the fly section from being extended too far

b. A rope used for hoisting fly sections

c. Curved, sharp, metal devices (two in number) which fold outward from each beam at the top end of a roof ladder

d. A ladder with two or more sections

e. An assembly of beam members, so combined as to form a rigid framework

f. One of two principal structural sides of a ladder

g. The upper or top sections of an extension ladder

h. Metal devices used to hold the fly section in place after it has been extended

i. The lower section of an extension ladder

j. The bottom or ground end of a ladder

k. A ladder with one section

l. Metal devices at the lower end of ladder poles

SELF-CHECK ANSWER KEY FOR FIRE SERVICE LADDER PRACTICES

1. (d)
2. (i)
3. (g)
4. (j)
5. (f)
6. (e)
7. (b)
8. (a)
9. (c)
10. (h)

All of your answers should agree with the answers on the answer key. If you missed any, go back and repeat one or more of the Learning Activities for the Learning Guide.

When you have successfully completed the self-check, notify your Training Coordinator or Chief Instructor to see if you are ready to take the written test. Then, continue on to the learning activity for the performance objective (page 69).

ACTIVITY SHEET FOR PERFORMANCE OBJECTIVES

Objectives	Learning Activities
Objective 1	
Demonstrate the proper procedure for removing and carrying the ladder to the designated site.	1. The candidate should practice the following types of ladder carries: low shoulder, high shoulder, flat shoulder, arm's length, and hip methods. 2. The candidate should, individually or as a member of a group, practice the following carries: (a) one-person (b) two-person (c) three-person (d) four-person (e) five-person (f) six-person
Objective 2	
Demonstrate the proper procedure for raising and completely extending the ladder.	1. The candidate should practice raising ladders using the (a) flat raise (parallel and perpendicular) method and (b) beam raise (parallel and perpendicular) method. 2. The candidate should practice climbing all of the following: (a) 55' Bangor ladder (b) 35' extension ladder (c) 24' extension ladder

Note:
- -- Drills should be arranged by your instructor to allow as much practice as possible.
- -- The Bangor and 35' and 24' extension ladders may be raised by your instructors to different levels of the tower and students may be rotated while climbing all three types.
- -- The instructor will monitor you at all times to make sure the proper lifting and raising method is used.
- -- The instructor should make sure you tie the halyard using a clove hitch with a safety and that you always have the ladder butted.
- -- Notify your Training Coordinator or Chief Instructor for any additional equipment. Make plans well in advance in order to secure the necessary equipment.

Your performance will be checked as adequate based on the items listed below:

1. Remove and place roof ladder in a safe place. Find balance point on the 24' extension and remove from unit.

2. Walk toward building, lowering the butt, and lightly place ladder flat on ground with both sections down and heel against building.

3. Face away from building, grasp the second rung from top, pivot under ladder, and raise it hand over hand against building.

4. While standing at side of ladder, using the elbow against hip technique as a fulcrum, bring ladder out from building to the proper distance.

5. Place one foot at the heel of one beam, and with the instep, knee, and leg, steady the ladder by the beam.

6. Watching the top of ladder for balance obstruction and hazards, grasp the halyard and extend the fly section with hand-over-hand motion to proper elevation.

7. Make sure ladder locks are in place and gently allow fly section to make contact with building.

8. Plumb and set ladder (approximately 75-degree angle) and secure halyard with a clove hitch and half hitch.

9. A one-point deduction will be made for each three seconds over three minutes.

If you feel confident that you have sufficiently practiced the activities for this section, ask your instructor for the performance test.

PERFORMANCE TEST_____

Performance Checklist

Ladders/Extension

Directions: Given a 24' extension ladder placed on the fire truck approximately 25' from the building to be laddered, the trainee shall demonstrate the proper procedure for removing and carrying the ladder to the designated site. The trainee will then demonstrate the proper procedure for raising and completely extending the ladder. Maximum time limit: three minutes in full protective clothing with SCBA on.

Trainee's Name (Print): _____ Class: _____

Evaluator: _____ Date: _____

Evaluator's Rating Scale:

4 No errors
3 One error
2 Two errors
1 More than two errors
0 Cannot perform

Maximum Standard:	32
Minimum Standard to Pass:	22

PERFORMANCE CHECKLIST_____

4 No errors
3 One error
2 Two errors
1 More than two errors
0 Cannot perform

Maximum Standard: 32
Mininum Standard to Pass: 22

	Performance 1st	2nd	3rd
1. Remove and place roof ladder in a safe place. Find balance point on the 24' extension and remove from unit.			
2. Walk toward building, lowering the butt, and lightly place ladder flat on ground with both sections down and heel against building.			
3. Face away from building, grasp the second rung from top, pivot under ladder, and raise it hand over hand against building.			
4. While standing at side of ladder, using the elbow against hip technique as a fulcrum, bring ladder out from building to the proper distance.			
5. Place one foot at the heel of one beam, and with the instep, knee, and leg, steady the ladder by the beam.			
6. Watching the top of ladder for balance obstruction and hazards, grasp the halyard and extend the fly section with hand-over-hand motion to proper elevation.			
7. Make sure ladder locks are in place and gently allow fly section to make contact with building.			

4 No errors
3 One error
2 Two errors
1 More than two errors
0 Cannot perform

Maximum Standard: 32
Mininum Standard to Pass: 22

	Performance 1st	2nd	3rd
8. Plumb and set ladder (approximately 75-degree angle) and secure halyard with a clove hitch and half hitch.			
9. A one-point deduction will be made for each three seconds over three minutes.	Time	Time	Time

SCORE:

FIRST FIELD EVALUATION	SECOND FIELD EVALUATION	THIRD FIELD EVALUATION
Date: _____	Date: _____	Date: _____
ACCEPTABLE _____	ACCEPTABLE _____	ACCEPTABLE _____
UNACCEPTABLE _____	UNACCEPTABLE _____	UNACCEPTABLE _____
Skills needing improvement:	Skills needing improvement:	Skills needing improvement:
List specific weakness.	List specific weakness.	List specific weakness.
State specific ways to improve skill:	State specific ways to improve skill:	State specific ways to improve skill:
Sign below:	Sign below:	Sign below:
Evaluator:	Evaluator:	Evaluator:
Trainee:	Trainee:	Trainee:

State of Florida
Department of Education
Tallahassee, Florida
Betty Castor, Commissioner
Affirmative action/equal opportunity employer

Division of Vocational, Adult, and Community Education

DVACE/11/89/150

123456789/89

PS 057 BK 89

CAREER MERIT ACHIEVEMENT PLAN (CAREER MAP)

FIRE FIGHTING

(0743.020300)

STUDENT'S NAME

State of Florida

An affirmative action/equal opportunity employer

DEPARTMENT OF EDUCATION
Betty Castor, Commissioner

DIVISION OF VOCATIONAL, ADULT, AND COMMUNITY EDUCATION
Robert S. Howell, Director

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THIS MERIT ACHIEVEMENT PLAN RECORDS THE ACHIEVEMENTS OF:

Student's Name _____

Student's ID Number _____

Student's Address _____

_____

Instructor's Name _____ **Initials** _____

School _____

_____

Date Started _____

PRIMARY JOB TITLE FOR THIS INSTRUCTIONAL PROGRAM

- Fire Fighting (DOT #373.364-010)

ACKNOWLEDGMENTS

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****This MAP contains shortened standards. The full text of every standard in this program can be found in the Appendix.**

OVERVIEW

This Career MAP includes the competencies required for entry into the work force as a fire fighter. Business and industry representatives have recommended that students in this field master these competencies in order to become employable. Local education agencies (LEAs) may adapt these competencies to meet their work-force needs.

Purposes of the MAP

The purposes of the MAP are to display the student performance standards (SPSs) required by the LEA and to document the level of achievement on SPSs that the student demonstrates.

How to Use the MAP

Administrator and Instructor. The administrator and instructor can use Career MAPs in curriculum planning, program updating and improvement, and teacher recruitment, selection, and updating. If the LEA changes or adds SPSs, the revised or additional SPSs should be included in the blank boxes that appear within each intended outcome or at the end of this MAP.

Instructor. The instructor can use Career MAPs to keep track of student progress on SPSs. By periodically reviewing the ratings on standards, the instructor can identify a student's strengths and weaknesses and on that basis identify the skills for which the student needs remedial instruction or advanced training. MAPs can also be useful in student counseling and evaluation.

Co-op Instructor/Employer. The employer who sponsors a co-op program should use the Career MAP for keeping a record of the student's performance on appropriate standards. The MAPs will also help the co-op instructor/employer in counseling and evaluating the student.

Student. The student may use the MAP to show potential employers the performance standards he or she has mastered. In order to present a complete record, the student should encourage the instructor to rate his or her level of achievement on all the appropriate SPSs and to fill in the verification form in the back of this MAP.

Employer. The MAP shows an employer the SPSs mastered by the student (a prospective employee) and the proficiency level achieved on each one. This information can help the employer make decisions about hiring, job assignments, and job-training needs.

Rating Student Performance

Performance Competencies. Ratings on SPSs should be based upon business/industrial performance standards. The evaluator observes and evaluates student performance as he or she would in the role of the employer or supervisor.

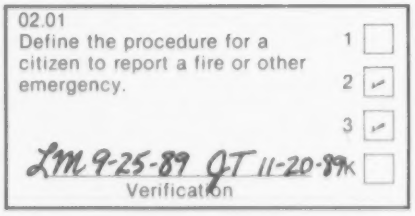
For each skill listed, the learner receives a rating of 1, 2, or 3. Each rating indicates a particular level of achievement:

1 = Learner demonstrates knowledge and understanding of this SPS, but is not yet able to apply that knowledge or understanding.

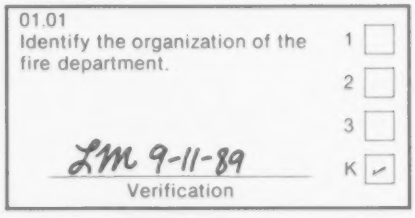
2 = Learner performs this SPS satisfactorily with only periodic supervision.

3 = Learner performs this SPS satisfactorily without supervision.

Whenever a performance standard is demonstrated, the instructor checks the appropriate rating box (1, 2, or 3) and initials and dates the verification line. If the student later demonstrates a higher level of achievement on a performance competency, the instructor checks the higher level and then enters his or her initials and the new date on the verification line, as shown in the following example:



Knowledge Competencies. For each SPS that is a knowledge competency only, with no manipulative skill involved, only one level of achievement is possible. If the student masters the competency, he or she receives a check in the bottom box ("K"), as shown below:



NOTE: An SPS without a checked rating indicates that the learner has not mastered the standard from lack of ability, time, opportunity, or need (the student's area of specialization may not have required it).

01.0 DEMONSTRATE KNOWLEDGE OF FIRE DEPARTMENT ORGANIZATION AND PROCEDURES.

01.01 Identify the organization of the fire department. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.02 Identify the size of the fire department, the scope of its operation, and the standard operational procedures. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.03 Identify the fire department rules and regulations that apply to the position of fire fighter. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
01.04 Identify responsibilities of the fire fighter in determining the point of origin, cause, and protection of evidence in fires. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.05 Identify procedures for shutting off the gas services to a building. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.06 Identify procedures for shutting off electrical service to a building. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
01.07 Demonstrate the service and maintenance of portable power plants and lighting equipment. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

02.0 USE FIRE ALARMS AND COMMUNICATIONS EQUIPMENT.

02.01 Define the procedure for a citizen to report a fire or other emergency. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	02.02 Demonstrate receiving an alarm or a report of an emergency, and initiate action. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	02.03 Define the purpose and function of all alarm-receiving instruments and personnel-alerting equipment in the fire station. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
02.04 Identify traffic control devices installed in the fire station to facilitate the response of apparatus. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	02.05 Identify prescribed fire department radio procedures. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	02.06 Define policy and procedures concerning the ordering and transmitting of multiple alarms of fire and calls for special assistance from the emergency scene. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification

02.07
Identify areas assigned for first-alarm response.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

02.08
Demonstrate both mobile and portable radio equipment.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

02.09
Identify fire department radio procedures.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

02.10
Identify supervisory alarm equipment provided in the fire station and the prescribed action to be taken upon receipt of designated signals.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

02.11
Identify fire-location indicators provided to direct fire fighters to specific locations in protected public or private properties.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

03.0 DEMONSTRATE KNOWLEDGE OF FIRE BEHAVIOR.

03.01
Define fire.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

03.02
Define the fire triangle and tetrahedron.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

03.03
Identify two chemical, mechanical, and electrical energy heat sources.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

03.04
Define the following potential stages of fire: (1) incipient, (2) flame spread, (3) hot smoldering, (4) flashover; (5) steady state, (6) clear burning.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

03.05
Define the three methods of heat transfer.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

03.06
Define the three physical stages of matter in which fuels are commonly found.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

03.07
Define the hazard of finely divided fuels as they relate to the combustion process.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

03.08
Define flash point, fire point, and ignition temperature.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

03.09
Define concentrations of oxygen in air as they affect combustion.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

03.10
Identify three products of combustion commonly found in structural fires which create a life hazard.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

03.11
Define the following units of heat measurement: (1) British Thermal Unit (Btu), (2) Fahrenheit (F), (3) Celsius (C), (4) Calorie (cal).
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

03.12
Define thermal balance and imbalance.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

04.0 USE PORTABLE FIRE EXTINGUISHERS.

04.01 Identify the classification of types of fires as they relate to the use of portable extinguishers. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.02 Given a group of differing extinguishers, identify the appropriate extinguishers for the various classes of fire. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.03 Define the portable extinguisher rating system. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
04.04 Demonstrate the use of portable fire extinguishers for each class of fire. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

05.0 USE SELF-CONTAINED BREATHING APPARATUS.

05.01 Identify at least four hazardous respiratory environments encountered in fire fighting. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.02 Demonstrate the use of all types of self-contained breathing apparatus in a dense smoke environment. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.03 Identify the physical requirements of the wearer, the limitations of the self-contained breathing apparatus, ...* *See Appendix. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
05.04 Demonstrate donning self-contained breathing apparatus while wearing protective clothing. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.05 Demonstrate that the self-contained breathing apparatus is in a safe condition for immediate use. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.06 Identify the procedure for cleaning and sanitizing self-contained breathing apparatus for future use. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification

05.07
Identify the procedure for daily inspection and maintenance of self-contained breathing apparatus.

1 ☐
2 ☐
3 ☐
K ☐

Verification

05.08
Given each type of self-contained breathing apparatus, demonstrate the correct procedure for recharging it.

1 ☐
2 ☐
3 ☐
K ☐

Verification

05.09
Demonstrate the following emergency techniques, using self-contained breathing apparatus to . . . .*

*See Appendix.

1 ☐
2 ☐
3 ☐
K ☐

Verification

1 ☐
2 ☐
3 ☐
K ☐

Verification

1 ☐
2 ☐
3 ☐
K ☐

Verification

1 ☐
2 ☐
3 ☐
K ☐

Verification

06.0 DEMONSTRATE KNOWLEDGE OF FIRE APPARATUS.*

*See Appendix.

06.01
Identify the function of a fire company.

1 ☐
2 ☐
3 ☐
K ☐

Verification

06.02
Describe the functions of the following units: . . . .

1 ☐
2 ☐
3 ☐
K ☐

Verification

06.03
Describe crash-fire-rescue and its uses.

1 ☐
2 ☐
3 ☐
K ☐

Verification

06.04
Identify special equipment used in the following apparatus: (1) rescue, (2) chemical, (3) flood-light and power, (4) air truck.

1 ☐
2 ☐
3 ☐
K ☐

Verification

1 ☐
2 ☐
3 ☐
K ☐

Verification

1 ☐
2 ☐
3 ☐
K ☐

Verification

1 ☐
2 ☐
3 ☐
K ☐

Verification

1 ☐
2 ☐
3 ☐
K ☐

Verification

1 ☐
2 ☐
3 ☐
K ☐

Verification

07.0 USE FORCIBLE-ENTRY EQUIPMENT.*

*See Appendix.

07.01
Identify and demonstrate the use of each type of manual forcible-entry tool.

1 ☐
2 ☐
3 ☐
K ☐

Verification

07.02
Identify the method and procedure of properly cleaning, maintaining, and inspecting each type of forcible-entry tool and equipment.

1 ☐
2 ☐
3 ☐
K ☐

Verification

07.03
Identify materials and construction features of . . . and define the dangers associated with each in an emergency situation.

1 ☐
2 ☐
3 ☐
K ☐

Verification

07.04
Identify the method and technique of forcible entry through any door, window, ceiling, roof, floor, or vertical barrier.

1 ☐
2 ☐
3 ☐
K ☐

Verification

1 ☐
2 ☐
3 ☐
K ☐

Verification

1 ☐
2 ☐
3 ☐
K ☐

Verification

1 ☐
2 ☐
3 ☐
K ☐

Verification

1 ☐
2 ☐
3 ☐
K ☐

Verification

1 ☐
2 ☐
3 ☐
K ☐

Verification

08.0 DEMONSTRATE VENTILATION PRACTICES.

08.01
Define the principles of ventilation, and identify the advantages and effects of ventilation.

1 ☐
2 ☐
3 ☐
K ☐

Verification

08.02
Identify the dangers present and precautions to be taken in performing ventilation.

1 ☐
2 ☐
3 ☐
K ☐

Verification

08.03
Demonstrate opening various types of windows from inside and outside, with and without the use of fire department tools.

1 ☐
2 ☐
3 ☐
K ☐

Verification

08.04
Demonstrate breaking window or door glass and removing the obstruction.

1 ☐
2 ☐
3 ☐
K ☐

Verification

08.05
Demonstrate the ventilation of a roof and a floor using an axe.

1 ☐
2 ☐
3 ☐
K ☐

Verification

08.06
Define the theory of a "back-draft explosion."

1 ☐
2 ☐
3 ☐
K ☐

Verification

08.07
Describe the use of different types of power saws and jackhammers.

1 ☐
2 ☐
3 ☐
K ☐

Verification

08.08
Identify the different types of roofs, demonstrate the techniques used to ventilate each type, and identify the necessary precautions.

1 ☐
2 ☐
3 ☐
K ☐

Verification

08.09
Identify the size and location of an opening for ventilation and the precautions to be taken during ventilation.

1 ☐
2 ☐
3 ☐
K ☐

Verification

08.10
Demonstrate the removal of skylights, scuttle covers, and other covers on rooftops.

1 ☐
2 ☐
3 ☐
K ☐

Verification

08.11
Demonstrate types of equipment used for forced ventilation.

1 ☐
2 ☐
3 ☐
K ☐

Verification

08.12
Demonstrate ventilation using water fog.

1 ☐
2 ☐
3 ☐
K ☐

Verification

1 ☐
2 ☐
3 ☐
K ☐

Verification

1 ☐
2 ☐
3 ☐
K ☐

Verification

1 ☐
2 ☐
3 ☐
K ☐

Verification

09.0 USE ROPES, TOOLS, AND EQUIPMENT.*

*See Appendix.

09.01
Given the name, picture, or actual knot, identify it and describe the purpose for which it would be used.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

09.02
Identify the construction characteristics and appropriate uses of natural and synthetic ropes.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

09.03
When given the proper size and amount of rope, demonstrate tying . . . .
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

09.04
When given the proper rope, demonstrate the bight, loop, round turn, and half hitch as used in tying knots and hitches.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

09.05
Using an approved knot, hoist any selected forcible-entry tool, ground ladder, or appliance to a height of at least 20 feet (6 m).
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

09.06
Demonstrate the techniques of inspecting, cleaning, maintaining, and storing rope.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

09.07
When given a simulated fire-fighting or rescue task, select the appropriate size, strength, and length of rope for the task.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

09.08
Select and tie a rope between two objects at least 15 feet (4.6 m) apart that will support the weight of a fire fighter on the rope.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

09.09
Use a rope to tie ladders, hoses, and other equipment to immovable objects for security.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

09.10
Given the name and picture of or the actual tool, identify it and demonstrate its use, care, and maintenance.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

10.0 DEMONSTRATE RESCUE PROCEDURES.

10.01
Demonstrate the removal of injured persons from the immediate hazard by the use of carries, drags, and stretchers.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

10.02
Demonstrate searching for victims in burning, smoke-filled buildings or other hostile environments.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

10.03
Define the uses of a life belt.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

10.04
Define safety procedures as they apply to rescue.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

10.05
Demonstrate the techniques of removing debris, rubble, and other materials.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

10.06
Define the use of the following rescue tools: (1) shoring blocks, (2) trench jacks, (3) block and tackle, (4) hydraulic devices, (5) pneumatic devices.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

10.07
Demonstrate the techniques of preparing a victim for emergency transportation by (1) using standard available equipment or (2) improvising a method.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

10.08
Identify the dangers of search-and-rescue missions in tunnels, caves, construction sites, and other hazardous areas.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

10.09
Operating as a member of a team, demonstrate the extrication of a victim from a vehicle accident.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

10.10
Tie a standard rescue knot on a victim and lower him or her from a third-floor level.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

10.11
Identify safety procedures used during elevator rescue operations.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

11.0 DEMONSTRATE SAFETY PROCEDURES.*

*See Appendix.

11.01
Identify dangerous building conditions created by fire.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

11.02
Demonstrate techniques for action when trapped or disoriented in a fire situation or a hostile environment.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

11.03
Define procedures to be used in electrical emergencies.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

11.04
Define fire-service lighting equipment.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

11.05
Identify safety procedures when using fire-service lighting equipment.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

11.06
Demonstrate use of portable power plants, lights, cords, and connectors.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

11.07
Demonstrate the service and maintenance of portable power plants and lighting equipment.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

11.08
Define safety procedures as they apply to emergency operations. The specific areas to be defined are: . . . .
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

12.0 USE LADDERS.*

*See Appendix.

12.01 Identify each type of ladder and define its use. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	12.02 Operating as an individual and as a member of a team, demonstrate the following ladder carries: . . . . . 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	12.03 Operating as an individual and as a member of a team, raise each type and size of ground ladder, using several different raises for each ladder. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
12.04 Climb the full length of every type of ground and aerial ladder. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	12.05 Climb the full length of every type of ground and aerial ladder carrying fire-fighting tools or equipment while ascending and descending. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	12.06 Climb the full length of every type of ground and aerial ladder and bring an "injured person" down each. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
12.07 Demonstrate the techniques of working from ground or aerial ladders with tools and appliances, with and without a life belt. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	12.08 Demonstrate the techniques of cleaning ladders. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	12.09 Identify the materials used in ladder construction. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
12.10 Identify the load safety features of all ground and aerial ladders. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	12.11 Demonstrate inspection and maintenance techniques for different types of ground and aerial ladders. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

13.0 USE FIRE HOSE, NOZZLES, AND APPLIANCES.*

*See Appendix.

13.01 Identify the sizes, types, amounts, and use of hoses carried on a pumper. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.02 Demonstrate the use of nozzles, hose adaptors, and hose appliances carried on a pumper. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.03 When given the necessary equipment . . . advance dry hose lines of two different sizes—from a pumper . . . . 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
13.04 When given the necessary equipment . . . advance charged attack lines of two different sizes. . . from a pumper . . . . 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.05 Demonstrate the techniques for cleaning fire hose, couplings, and nozzles and for inspecting for damage. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.06 Connect a fire hose to a hydrant and fully open and close the hydrant. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
13.07 Demonstrate the loading of fire hose on a fire apparatus and identify the purpose of at least three types of hose loads and finishes. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.08 Demonstrate three types of hose rolls. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.09 Demonstrate two types of hose carries. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
13.10 Demonstrate coupling and uncoupling fire hose. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.11 Work from a ladder with a charged attack line, which shall be 1 1/2 inches or larger. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.12 Demonstrate the techniques of carrying hose into a building to be connected to a standpipe and of advancing a hose line from a standpipe. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
13.13 Demonstrate the methods for extending a hose line. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.14 Demonstrate replacing a burst section of hose line. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.15 Identify, select, and demonstrate the use of any nozzle. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
13.16 Demonstrate all hand-hose lays. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.17 Demonstrate inspection and maintenance of fire hose, couplings, and nozzles and recommend replacement or repair as needed. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	13.18 Demonstrate all hydrant to pumper-hose connections. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
13.19 Select adapters and appliances to be used in a specific fireground situation. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

FIRE FIGHTING

BEST COPY AVAILABLE

1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

14.0 USE FIRE STREAMS.

14.01 Define a fire stream. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	14.02 Manipulate a nozzle so as to attack a Class A fire and a Class B fire. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	14.03 Define "water hammer" and at least one method to prevent it. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
14.04 Demonstrate how to open and close a nozzle. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	14.05 Define the following methods of water application: (1) direct, (2) indirect, (3) combination. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	14.06 Given fire situations, select the proper nozzle and hose size for each. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
14.07 Identify characteristics of all types of fire streams. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	14.08 Identify precautions to be followed while advancing hose lines to a fire. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	14.09 Identify three conditions that result in pressure losses in a hose line. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
14.10 Identify four special stream nozzles and demonstrate at least two uses or applications for each. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	14.11 Identify and define foam-making appliances and demonstrate a foam stream from each. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	14.12 Identify three observable results that are obtained when the proper application of a fire stream is accomplished. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
14.13 Identify and define those items required to develop three types of fire streams and demonstrate each. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

15.0 USE WATER SUPPLIES.*

*See Appendix.

15.01
Identify the water distribution system and other water sources in the local community.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

15.02
Identify the following parts of a water distribution system: (1) distributors, (2) primary feeders, (3) secondary feeders.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

15.03
Identify a (1) dry-barrel hydrant, (2) wet-barrel hydrant.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

15.04
Identify the following: . . . .
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

15.05
Identify the following types of main water valves: (1) indicating, (2) nonindicating, (3) post indicator, (4) outside screw and yoke.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

15.06
Identify hydrant usability by . . . .
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

15.07
Define a tanker shuttle.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

15.08
Identify the apparatus, equipment, and appliances required to provide water at rural locations by relay pumping, large-diameter hose, or a tanker shuttle.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

15.09
Demonstrate deployment of a portable water tank.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

16.0 USE SPRINKLER SYSTEMS.*

*See Appendix.

16.01
Identify a fire department sprinkler connection and water motor alarm.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

16.02
Connect hose line(s) to a fire department connection of a sprinkler or standpipe system.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

16.03
Define how the automatic sprinkler heads open and release water.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

16.04
Temporarily stop the flow of water from a sprinkler head.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

16.05
Identify the Main Drain valve on an automatic sprinkler system.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

16.06
Open and close the Main Drain valve on an automatic sprinkler system.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

16.07
Identify the Main Control valve on an automatic sprinkler system.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

16.08
Operate the Main Control valve on an automatic sprinkler system—from Open to Closed and then back to Open.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

16.09
Define the value of automatic sprinklers in providing safety to the occupants in a structure.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

16.10
Identify and define the dangers of premature closure of a sprinkler Main Control valve . . . supplying the automatic sprinkler system.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

16.11
Identify the difference between an automatic sprinkler system that affords complete coverage and a partial sprinkler system.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

16.12
Identify at least three sources of water to supply an automatic sprinkler system.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

16.13
Identify the following: (1) wet sprinkler system, (2) dry sprinkler system, (3) deluge sprinkler system, (4) residential sprinkler system.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

16.14
Demonstrate removing one head from a sprinkler system and replacing it with the same type of head.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

17.0 DEMONSTRATE SALVAGE PROCEDURES.

17.01
Identify the purpose of salvage and its value to the public and to the fire department.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

17.02
Demonstrate folds and rolls of salvage covers as an individual and as a member of a team.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

17.03
Demonstrate salvage cover throws as an individual and as a member of a team.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

17.04
Demonstrate the techniques of inspection, cleaning, and maintaining salvage equipment.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

17.05
When given salvage equipment, demonstrate the construction and use of a water chute—as an individual and as a member of a team.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

17.06
When given salvage equipment, demonstrate the construction and use of a water catch-all operating as an individual and as a member of a team.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

17.07
When given salvage equipment except salvage covers, demonstrate the removal of debris and the routing and removal of water from a structure.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

17.08
Demonstrate the covering or closing of openings made during fire-fighting operations.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

FIRE FIGHTING

1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

18.0 DEMONSTRATE OVERHAUL PROCEDURES.

18.01 Demonstrate searching for hidden fires. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	18.02 Demonstrate exposure of hidden fires by opening ceilings, walls, and floors and by pulling apart burned materials. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	18.03 Demonstrate how to separate and remove charred material from unburned material. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
18.04 Define duties of fire fighters left at the fire scene for fire and security surveillance. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	18.05 Identify the purpose of overhaul. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	18.06 List the procedures to follow during overhaul. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
18.07 Identify the safety precautions necessary during overhaul. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

19.0 FOLLOW FIRE-PREVENTION INSPECTION PRACTICES.

19.01 Identify the common causes of fires and their prevention. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	19.02 Identify the fire inspection procedures. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	19.03 Define the importance of public relations relative to the inspection programs. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification

19.04 Define dwelling-inspection procedures. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	19.05 Prepare diagrams or sketches of buildings to record the locations of items of concern during prefire-planning operations. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	19.06 Collect and record in writing information required for the purpose of preparing a report on a building inspection or survey. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
19.07 Identify school exit drill procedures. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	19.08 Identify life safety programs for the home. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	19.09 Identify common fire hazards and make recommendations for their correction. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

20.0 DEMONSTRATE KNOWLEDGE OF THE FUNDAMENTALS OF EXTINGUISHMENT.

20.01 Define the fundamental steps in the process of fire extinguishment. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	20.02 Identify the considerations involved with various types of structural fires. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	20.03 List the sequence of activities involved with various amounts of fire within a structure. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
20.04 Identify the elements of ground-cover fire. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	20.05 Demonstrate a knowledge of flammable liquids and gases. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	20.06 Identify the fire-fighting techniques employed in combating flammable liquid and gases. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

21.0 FOLLOW HEALTH AND HUMAN RELATIONS PRACTICES.

21.01 Apply infection control measures in accordance with Centers for Disease Control (CDC) guidelines. 1 2 3 K Verification	21.02 Recognize and report signs of abuse and neglect. 1 2 3 K Verification	1 2 3 K Verification
1 2 3 K Verification	1 2 3 K Verification	1 2 3 K Verification

22.0 PROVIDE EMERGENCY MEDICAL CARE.*

22.01 Identify a primary survey for life-threatening injuries. 1 2 3 K Verification	22.02 Identify procedures for determining whether or not a victim has an open airway. 1 2 3 K Verification	22.03 Identify procedures for establishing an open airway in a nonbreathing person. 1 2 3 K Verification
22.04 Demonstrate mouth-to-mouth and mouth-to-nose resuscitation. 1 2 3 K Verification	22.05 Demonstrate oronasal ventilation. 1 2 3 K Verification	22.06 Identify the three signs of cardiac arrest. 1 2 3 K Verification
22.07 Demonstrate cardiopulmonary resuscitation (CPR). 1 2 3 K Verification	22.08 Identify three types of external bleeding and the characteristics of each. 1 2 3 K Verification	22.09 Demonstrate techniques for controlling external bleeding. 1 2 3 K Verification

*Standards 22.01-22.25 are consistent with NFPA 1001. Their consistency with the DOT First Responder Curriculum Objectives must be determined.

22.10 Identify four sources from which information might be gathered pertaining to the nature of an accident victim's injuries. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	22.11 When given specific situations, identify what injuries might be in addition to those injuries that are obvious. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	22.12 When given a victim, conduct a secondary survey for other than life-threatening injuries. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
22.13 Identify the signs and symptoms of internal bleeding. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	22.14 Demonstrate emergency care for a person with known or suspected internal bleeding. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	22.15 Identify characteristics and emergency medical care of thermal burns according to severity. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
22.16 When given a specific situation, demonstrate and define the sequential emergency medical care indicated. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	22.17 Identify the emergency medical care for chemical burns, including chemical burns of the eyes. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	22.18 Define the types of fractures and describe the differences. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
22.19 Identify three general signs and symptoms of fractures. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	22.20 When given an identified fracture, demonstrate the emergency medical care necessary to transport the victim. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	22.21 Identify the anatomical process of breathing. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
22.22 Identify the heart-lung-brain relationship as it affects life and define what occurs when an airway obstruction is not corrected. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	22.23 Demonstrate CPR employing the two-person technique. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	22.24 Identify symptoms and demonstrate emergency medical care of traumatic shock. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
22.25 Demonstrate the use of breathing aid equipment. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

*Standards 22.01-22.25 are consistent with NFPA 1001. Their consistency with the DOT First Responder Curriculum Objectives must be determined.

FIRE FIGHTING

23.0 PARTICIPATE IN A PHYSICAL FITNESS PROGRAM.

23.01 Exercise each morning during training. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	23.02 Participate in physical fitness exercises during training for a total of eight hours. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

24.0 PARTICIPATE IN FIRE-TRAINING EXAMINATIONS.

24.01 Take a written/oral test on each academic portion of the outline. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	24.02 Take a performance test on each portion of the outline. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

25.0 PARTICIPATE IN CONTROLLED-BURNING EXERCISES.

25.01 Practice exercises in fire control of structure. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	25.02 Practice exercises in fire control of flammable liquids. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	25.03 Practice exercises in fire control of natural or propane gas. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification

FIRE FIGHTING

25.04 Practice exercises in fire control of vehicles. 1 2 3 K _____ Verification	1 2 3 K _____ Verification	1 2 3 K _____ Verification
1 2 3 K _____ Verification	1 2 3 K _____ Verification	1 2 3 K _____ Verification

26.0 DEMONSTRATE EMPLOYABILITY SKILLS.

26.01 Conduct a job search. 1 2 3 K _____ Verification	26.02 Secure information about a job. 1 2 3 K _____ Verification	26.03 Identify documents that may be required when applying for a job. 1 2 3 K _____ Verification
26.04 Complete a job application. 1 2 3 K _____ Verification	26.05 Demonstrate competence in job interview techniques. 1 2 3 K _____ Verification	26.06 Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other persons. 1 2 3 K _____ Verification
26.07 Identify acceptable work habits. 1 2 3 K _____ Verification	26.08 Demonstrate knowledge of how to make job changes appropriately. 1 2 3 K _____ Verification	26.09 Demonstrate acceptable employee health habits. 1 2 3 K _____ Verification
1 2 3 K _____ Verification	1 2 3 K _____ Verification	1 2 3 K _____ Verification
1 2 3 K _____ Verification	1 2 3 K _____ Verification	1 2 3 K _____ Verification

27.0 OBTAIN CERTIFICATION AS A FIRE FIGHTER.

27.01
Complete the basic fire-fighting course.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

27.02
Pass the state certification test, including practical examination.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

27.03
Pass a physical examination based on NFPA 1001.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

27.04
Certificate will depend upon a passing score.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

28.0 DEMONSTRATE KNOWLEDGE OF SEXUALLY TRANSMITTED DISEASES (STDs), INCLUDING AIDS.

28.01
Distinguish between fact and fallacy about the transmission and treatment of STDs, including HIV infection.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

28.02
Identify community resources and services available to the victim of STDs.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

28.03
Identify at-risk behaviors which promote the spread of AIDS and the public education necessary to combat the spread of STDs.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

28.04
Apply infection control techniques designed to prevent the spread of STDs to the call of *all* patients, following CDC guidelines.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

28.05
Demonstrate knowledge of legal aspects of AIDS.
1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

1 ☐ 2 ☐ 3 ☐ K ☐
Verification

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Verification

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1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

FIRE FIGHTING

COOPERATIVE WORK EXPERIENCE COMPETENCIES

1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

FIRE FIGHTING

VERIFICATION

Each instructor who rates this student on competencies in this MAP should fill in one of the boxes below.

Initials _____ Signature _____

Title _____

School Name _____

School Address _____

Initials _____ Signature _____

Title _____

School Name _____

School Address _____

Initials _____ Signature _____

Title _____

School Name _____

School Address _____

COOPERATIVE WORK EXPERIENCE

In addition to classroom training and laboratory performance identified on the Career MAP, this student has participated in cooperative work experience with employers, as shown below.

Dates _____ Employer _____

Employer's Address _____

_____

Supervisor _____

Supervisor's Title _____

Dates _____ Employer _____

Employer's Address _____

_____

Supervisor _____

Supervisor's Title _____

Dates _____ Employer _____

Employer's Address _____

_____

Supervisor _____

Supervisor's Title _____

NOTES

This section of the MAP is provided for the instructor, employer, or student to list additional qualifying statements or other pertinent information. All comments should be initialed for verification.

APPENDIX

Below is a listing of all outcomes and student performance standards for Fire Fighting.

01.0
DEMONSTRATE KNOWLEDGE OF FIRE DEPARTMENT ORGANIZATION AND PROCEDURES.

01.01
Identify the organization of the fire department.

01.02
Identify the size of the fire department, the scope of its operation, and the standard operational procedures.

01.03
Identify the fire department rules and regulations that apply to the position of fire fighter.

01.04
Identify responsibilities of the fire fighter in determining the point of origin, cause, and protection of evidence in fires.

01.05
Identify procedures for shutting off the gas services to a building.

01.06
Identify procedures for shutting off electrical service to a building.

01.07
Demonstrate the service and maintenance of portable power plants and lighting equipment.

02.0
USE FIRE ALARMS AND COMMUNICATIONS EQUIPMENT.

02.01
Define the procedure for a citizen to report a fire or other emergency.

02.02
Demonstrate receiving an alarm or a report of an emergency, and initiate action.

02.03
Define the purpose and function of all alarm-receiving instruments and personnel-alerting equipment in the fire station.

02.04
Identify traffic control devices installed in the fire station to facilitate the response of apparatus.

02.05
Identify prescribed fire department radio procedures.

02.06
Define policy and procedures concerning the ordering and transmitting of multiple alarms of fire and calls for special assistance from the emergency scene.

02.07
Identify areas assigned for first-alarm response.

02.08
Demonstrate both mobile and portable radio equipment.

02.09
Identify fire department radio procedures.

02.10
Identify supervisory alarm equipment provided in the fire station and the prescribed action to be taken upon receipt of designated signals.

02.11
Identify fire-location indicators provided to direct fire fighters to specific locations in protected public or private properties.

03.0
DEMONSTRATE KNOWLEDGE OF FIRE BEHAVIOR.

03.01
Define fire.

03.02
Define the fire triangle and tetrahedron.

03.03
Identify two chemical, mechanical, and electrical energy heat sources.

03.04
Define the following potential stages of fire: (1) incipient, (2) flame spread, (3) hot smoldering, (4) flashover, (5) steady state, (6) clear burning.

03.05
Define the three methods of heat transfer.

03.06
Define the three physical stages of matter in which fuels are commonly found.

03.07
Define the hazard of finely divided fuels as they relate to the combustion process.

03.08
Define flash point, fire point, and ignition temperature.

03.09
Define concentrations of oxygen in air as they affect combustion.

03.10
Identify three products of combustion commonly found in structural fires which create a life hazard.

03.11
Define the following units of heat measurement: (1) British Thermal Unit (Btu), (2) Fahrenheit (F), (3) Celsius (C), (4) Calorie (cal).

03.12
Define thermal balance and imbalance.

04.0
USE PORTABLE FIRE EXTINGUISHERS.

04.01
Identify the classification of types of fires as they relate to the use of portable extinguishers.

04.02
Given a group of differing extinguishers, identify the appropriate extinguishers for the various classes of fire.

04.03
Define the portable extinguisher rating system.

04.04
Demonstrate the use of portable fire extinguishers for each class of fire.

05.0
USE SELF-CONTAINED BREATHING APPARATUS.

05.01
Identify at least four hazardous respiratory environments encountered in fire fighting.

05.02
Demonstrate the use of all types of self-contained breathing apparatus in a dense smoke environment.

05.03
Identify the physical requirements of the wearer, the limitations of the self-contained breathing apparatus, and the safety features of all types of self-contained breathing apparatus.

05.04
Demonstrate donning self-contained breathing apparatus while wearing protective clothing.

05.05
Demonstrate that the self-contained breathing apparatus is in a safe condition for immediate use.

05.06
Identify the procedure for cleaning and sanitizing self-contained breathing apparatus for future use.

05.07
Identify the procedure for daily inspection and maintenance of self-contained breathing apparatus.

05.08
Given each type of self-contained breathing apparatus, demonstrate the correct procedure for recharging it.

05.09
Demonstrate the following emergency techniques, using self-contained breathing apparatus to (1) assist other fire fighters, (2) conserve air, (3) show restriction in use of bypass valves.

06.0
DEMONSTRATE KNOWLEDGE OF FIRE APPARATUS.

06.01
Identify the function of a fire company.

06.02
Describe the functions of the following units: (1) a pumper company, (2) an aerial company, (3) a rural company, (4) a crash-fire-rescue unit, 5) an elevated platform.

06.03
Describe crash-fire-rescue and its uses.

06.04
Identify special equipment used in the following apparatus: (1) rescue, (2) chemical, (3) floodlight and power, (4) air truck.

07.0
USE FORCIBLE-ENTRY EQUIPMENT.

07.01
Identify and demonstrate the use of each type of manual forcible-entry tool.

07.02
Identify the method and procedure of properly cleaning, maintaining, and inspecting each type of forcible-entry tool and equipment.

07.03
Identify materials and construction features of doors, windows, roofs, floors, and vertical barriers and define the dangers associated with each in an emergency situation.

07.04
Identify the method and technique of forcible entry through any door, window, ceiling, roof, floor, or vertical barrier.

08.0
DEMONSTRATE VENTILATION PRACTICES.

08.01
Define the principles of ventilation, and identify the advantages and effects of ventilation.

08.02
Identify the dangers present and precautions to be taken in performing ventilation.

08.03
Demonstrate opening various types of windows from inside and outside, with and without the use of fire department tools.

08.04
Demonstrate breaking window or door glass and removing the obstruction.

08.05
Demonstrate the ventilation of a roof and a floor using an axe.

08.06
Define the theory of a "back-draft explosion."

08.07
Describe the use of different types of power saws and jackhammers.

08.08
Identify the different types of roofs, demonstrate the techniques used to ventilate each type, and identify the necessary precautions.

08.09
Identify the size and location of an opening for ventilation and the precautions to be taken during ventilation.

08.10
Demonstrate the removal of skylights, scuttle covers, and other covers on rooftops.

08.11
Demonstrate types of equipment used for forced ventilation.

08.12
Demonstrate ventilation using water fog.

09.0
USE ROPES, TOOLS, AND EQUIPMENT.

9.01
Given the name, picture, or actual knot, identify it and describe the purpose for which it would be used.

09.02
Identify the construction characteristics and appropriate uses of natural and synthetic ropes.

09.03
When given the proper size and amount of rope, demonstrate tying a bowline knot, a clove hitch, a rescue knot, a figure-of-eight knot, a becket or sheet bend, and an overhand safety knot.

09.04
When given the proper rope, demonstrate the bight, loop, round turn, and half hitch as used in tying knots and hitches.

09.05
Using an approved knot, hoist any selected forcible-entry tool, ground ladder, or appliance to a height of at least 20 feet (6 m).

09.06
Demonstrate the techniques of inspecting, cleaning, maintaining, and storing rope.

09.07
When given a simulated fire-fighting or rescue task, select the appropriate size, strength, and length of rope for the task.

09.08
Select and tie a rope between two objects at least 15 feet (4.6 m) apart that will support the weight of a fire fighter on the rope.

09.09
Use a rope to tie ladders, hoses, and other equipment to immovable objects for security.

09.10
Given the name and picture of or the actual tool, identify it and demonstrate its use, care, and maintenance.

10.0
DEMONSTRATE RESCUE PROCEDURES.

10.01
Demonstrate the removal of injured persons from the immediate hazard by the use of carries, drags, and stretchers.

10.02
Demonstrate searching for victims in burning, smoke-filled buildings or other hostile environments.

10.03
Define the uses of a life belt.

10.04
Define safety procedures as they apply to rescue.

10.05
Demonstrate the techniques of removing debris, rubble, and other materials.

10.06
Define the use of the following rescue tools: (1) shoring blocks, (2) trench jacks, (3) block and tackle, (4) hydraulic devices, (5) pneumatic devices.

10.07
Demonstrate the techniques of preparing a victim for emergency transportation by (1) using standard available equipment or (2) improvising a method.

10.08
Identify the dangers of search-and-rescue missions in tunnels, caves, construction sites, and other hazardous areas.

10.09
Operating as a member of a team, demonstrate the extrication of a victim from a vehicle accident.

10.10
Tie a standard rescue knot on a victim and lower him or her from a third-floor level.

10.11
Identify safety procedures used during elevator rescue operations.

11.0
DEMONSTRATE SAFETY PROCEDURES.

11.01
Identify dangerous building conditions created by fire.

11.02
Demonstrate techniques for action when trapped or disoriented in a fire situation or a hostile environment.

11.03
Define procedures to be used in electrical emergencies.

11.04
Define fire-service lighting equipment.

11.05
Identify safety procedures when using fire-service lighting equipment.

11.06
Demonstrate use of portable power plants, lights, cords, and connectors.

11.07
Demonstrate the service and maintenance of portable power plants and lighting equipment.

11.08
Define safety procedures as they apply to emergency operations. The specific areas to be defined are: (1) protective equipment, (2) team concept, (3) portable tools and equipment, (4) riding an apparatus, (5) hazardous-materials incidents.

12.0
USE LADDERS.

12.01
Identify each type of ladder and define its use.

12.02
Operating as an individual and as a member of a team, demonstrate the following ladder carries: (1) one-person carry, (2) two-person carry, (3) three-person carry, (4) four-person carry (5) five-person carry, (6) six-person carry.

12.03
Operating as an individual and as a member of a team, raise each type and size of ground ladder, using several different raises for each ladder.

12.04
Climb the full length of every type of ground and aerial ladder.

12.05
Climb the full length of every type of ground and aerial ladder carrying fire-fighting tools or equipment while ascending and descending.

12.06
Climb the full length of every type of ground and aerial ladder and bring an "injured person" down each.

12.07
Demonstrate the techniques of working from ground or aerial ladders with tools and appliances, with and without a life belt.

12.08
Demonstrate the techniques of cleaning ladders.

12.09
Identify the materials used in ladder construction.

12.10
Identify the load safety features of all ground and aerial ladders.

12.11
Demonstrate inspection and maintenance techniques for different types of ground and aerial ladders.

13.0
USE FIRE HOSE, NOZZLES, AND APPLIANCES.

13.01
Identify the sizes, types, amounts, and use of hoses carried on a pumper.

13.02
Demonstrate the use of nozzles, hose adaptors, and hose appliances carried on a pumper.

13.03
When given the necessary equipment and operating both as an individual and as a member of a team, advance dry hose lines of two different sizes—both of which shall be 1 1/2 inches or larger—from a pumper (1) into a structure, (2) up a ladder into an upper floor window, (3) up an inside stairway to an upper floor, (4) up an outside stairway to an upper floor, (5) down an inside stairway to a lower floor, (6) down an outside stairway to a lower floor, (7) to an upper floor by hoisting.

13.04
When given the necessary equipment and operating as a member of a team, advance charged attack lines of two different sizes—both of which shall be 1 1/2 inches or larger—from a pumper (1) into a structure, (2) up a ladder into an upper floor window, (3) up an outside stairway to an upper floor, (4) up an inside stairway to an upper floor, (5) down an inside stairway to a lower floor, (6) down an outside stairway to a lower floor, (7) to an upper floor by hoisting.

13.05
Demonstrate the techniques for cleaning fire hose, couplings, and nozzles and for inspecting for damage.

13.06
Connect a fire hose to a hydrant and fully open and close the hydrant.

13.07
Demonstrate the loading of fire hose on a fire apparatus and identify the purpose of at least three types of hose loads and finishes.

13.08
Demonstrate three types of hose rolls.

13.09
Demonstrate two types of hose carries.

13.10
Demonstrate coupling and uncoupling fire hose.

13.11
Work from a ladder with a charged attack line, which shall be 1 1/2 inches or larger.

13.12
Demonstrate the techniques of carrying hose into a building to be connected to a standpipe and of advancing a hose line from a standpipe.

13.13
Demonstrate the methods for extending a hose line.

13.14
Demonstrate replacing a burst section of hose line.

13.15
Identify, select, and demonstrate the use of any nozzle.

13.16
Demonstrate all hand-hose lays.

13.17
Demonstrate inspection and maintenance of fire hose, couplings, and nozzles and recommend replacement or repair as needed.

13.18
Demonstrate all hydrant to pumper-hose connections.

13.19
Select adapters and appliances to be used in a specific fireground situation.

14.0
USE FIRE STREAMS.

14.01
Define a fire stream.

14.02
Manipulate a nozzle so as to attack a Class A fire and a Class B fire.

14.03
Define "water hammer" and at least one method to prevent it.

14.04
Demonstrate how to open and close a nozzle.

14.05
Define the following methods of water application: (1) direct, (2) indirect, (3) combination.

14.06
Given fire situations, select the proper nozzle and hose size for each.

14.07
Identify characteristics of all types of fire streams.

14.08
Identify precautions to be followed while advancing hose lines to a fire.

14.09
Identify three conditions that result in pressure losses in a hose line.

14.10
Identify four special stream nozzles and demonstrate at least two uses or applications for each.

14.11
Identify and define foam-making appliances and demonstrate a foam stream from each.

14.12
Identify three observable results that are obtained when the proper application of a fire stream is accomplished.

14.13
Identify and define those items required to develop three types of fire streams and demonstrate each.

15.0
USE WATER SUPPLIES.

15.01
Identify the water distribution system and other water sources in the local community.

15.02
Identify the following parts of a water distribution system: (1) distributors, (2) primary feeders, (3) secondary feeders.

15.03
Identify a (1) dry-barrel hydrant, (2) wet-barrel hydrant.

15.04
Identify the following: (1) normal operating pressure of a water distribution system, (2) residual pressure of a water distribution system, (3) the flow pressure from an opening that is flowing water.

15.05
Identify the following types of main water valves: (1) indicating, (2) nonindicating, (3) post indicator, (4) outside screw and yoke.

15.06
Identify hydrant usability by (1) obstructions to the use of the hydrant, (2) direction of hydrant outlets to suitability of use, (3) the presence of mechanical aboveground damage, (4) the condition of the paint for rust and corrosion, (5) the flow by fully opening the drain, (6) ability to drain.

15.07
Define a tanker shuttle.

15.08
Identify the apparatus, equipment, and appliances required to provide water at rural locations by relay pumping, large-diameter hose, or a tanker shuttle.

15.09
Demonstrate deployment of a portable water tank.

16.0
USE SPRINKLER SYSTEMS.

16.01
Identify a fire department sprinkler connection and water motor alarm.

16.02
Connect hose line(s) to a fire department connection of a sprinkler or standpipe system.

16.03
Define how the automatic sprinkler heads open and release water.

16.04
Temporarily stop the flow of water from a sprinkler head.

16.05
Identify the Main Drain valve on an automatic sprinkler system.

16.06
Open and close the Main Drain valve on an automatic sprinkler system.

16.07
Identify the Main Control valve on an automatic sprinkler system.

16.08
Operate the Main Control valve on an automatic sprinkler system—from Open to Closed and then back to Open.

16.09
Define the value of automatic sprinklers in providing safety to the occupants in a structure.

16.10
Identify and define the dangers of premature closure of a sprinkler Main Control valve and of using hydrants to supply hose streams when the same water system is supplying the automatic sprinkler system.

16.11
Identify the difference between an automatic sprinkler system that affords complete coverage and a partial sprinkler system.

16.12
Identify at least three sources of water to supply an automatic sprinkler system.

16.13
Identify the following: (1) wet sprinkler system, (2) dry sprinkler system, (3) deluge sprinkler system, (4) residential sprinkler system.

16.14
Demonstrate removing one head from a sprinkler system and replacing it with the same type of head.

17.0
DEMONSTRATE SALVAGE PROCEDURES.

17.01
Identify the purpose of salvage and its value to the public and to the fire department.

17.02
Demonstrate folds and rolls of salvage covers as an individual and as a member of a team.

17.03
Demonstrate salvage cover throws as an individual and as a member of a team.

17.04
Demonstrate the techniques of inspection, cleaning, and maintaining salvage equipment.

17.05
When given salvage equipment, demonstrate the construction and use of a water chute—as an individual and as a member of a team.

17.06
When given salvage equipment, demonstrate the construction and use of a water catch-all operating as an individual and as a member of a team.

17.07
When given salvage equipment except salvage covers, demonstrate the removal of debris and the routing and removal of water from a structure.

17.08
Demonstrate the covering or closing of openings made during fire-fighting operations.

18.0
DEMONSTRATE OVERHAUL PROCEDURES.

18.01
Demonstrate searching for hidden fires.

18.02
Demonstrate exposure of hidden fires by opening ceilings, walls, and floors and by pulling apart burned materials.

18.03
Demonstrate how to separate and remove charred material from unburned material.

18.04
Define duties of fire fighters left at the fire scene for fire and security surveillance.

18.05
Identify the purpose of overhaul.

18.06
List the procedures to follow during overhaul.

18.07
Identify the safety precautions necessary during overhaul.

19.0
FOLLOW FIRE-PREVENTION INSPECTION PRACTICES.

19.01
Identify the common causes of fires and their prevention.

19.02
Identify the fire inspection procedures.

19.03
Define the importance of public relations relative to the inspection programs.

19.04
Define dwelling-inspection procedures.

19.05
Prepare diagrams or sketches of buildings to record the locations of items of concern during prefire-planning operations.

19.06
Collect and record in writing information required for the purpose of preparing a report on a building inspection or survey.

19.07
Identify school exit drill procedures.

19.08
Identify life safety programs for the home.

19.09
Identify common fire hazards and make recommendations for their correction.

20.0
DEMONSTRATE KNOWLEDGE OF THE FUNDAMENTALS OF EXTINGUISHMENT.

20.01
Define the fundamental steps in the process of fire extinguishment.

20.02
Identify the considerations involved with various types of structural fires.

20.03
List the sequence of activities involved with various amounts of fire within a structure.

20.04
Identify the elements of ground-cover fire.

20.05
Demonstrate a knowledge of flammable liquids and gases.

20.06
Identify the fire-fighting techniques employed in combating flammable liquid and gases.

21.0
FOLLOW HEALTH AND HUMAN RELATIONS PRACTICES.

21.01
Apply infection control measures in accordance with Centers for Disease Control (CDC) guidelines.

21.02
Recognize and report signs of abuse and neglect.

22.0
PROVIDE EMERGENCY MEDICAL CARE.

22.01
Identify a primary survey for life-threatening injuries.

22.02
Identify procedures for determining whether or not a victim has an open airway.

22.03
Identify procedures for establishing an open airway in a nonbreathing person.

22.04
Demonstrate mouth-to-mouth and mouth-to-nose resuscitation.

22.05
Demonstrate oronasal ventilation.

22.06
Identify the three signs of cardiac arrest.

22.07
Demonstrate cardiopulmonary resuscitation (CPR).

22.08
Identify three types of external bleeding and the characteristics of each.

22.09
Demonstrate techniques for controlling external bleeding.

22.10
Identify four sources from which information might be gathered pertaining to the nature of an accident victim's injuries.

22.11
When given specific situations, identify what injuries might be in addition to those injuries that are obvious.

22.12
When given a victim, conduct a secondary survey for other than life-threatening injuries.

22.13
Identify the signs and symptoms of internal bleeding.

22.14
Demonstrate emergency care for a person with known or suspected internal bleeding.

22.15
Identify characteristics and emergency medical care of thermal burns according to severity.

22.16
When given a specific situation, demonstrate and define the sequential emergency medical care indicated.

22.17
Identify the emergency medical care for chemical burns, including chemical burns of the eyes.

22.18
Define the types of fractures and describe the differences.

22.19
Identify three general signs and symptoms of fractures.

22.20
When given an identified fracture, demonstrate the emergency medical care necessary to transport the victim.

22.21
Identify the anatomical process of breathing.

22.22
Identify the heart-lung-brain relationship as it affects life and define what occurs when an airway obstruction is not corrected.

22.23
Demonstrate CPR employing the two-person technique.

22.24
Identify symptoms and demonstrate emergency medical care of traumatic shock.

22.25
Demonstrate the use of breathing aid equipment.

23.0
PARTICIPATE IN A PHYSICAL FITNESS PROGRAM.

23.01
Exercise each morning during training.

23.02
Participate in physical fitness exercises during training for a total of eight hours.

24.0
PARTICIPATE IN FIRE-TRAINING EXAMINATIONS.

24.01
Take a written/oral test on each academic portion of the outline.

24.02
Take a performance test on each portion of the outline.

25.0
PARTICIPATE IN CONTROLLED-BURNING EXERCISES.

25.01
Practice exercises in fire control of structure.

25.02
Practice exercises in fire control of flammable liquids.

25.03
Practice exercises in fire control of natural or propane gas.

25.04
Practice exercises in fire control of vehicles.

26.0
DEMONSTRATE EMPLOYABILITY SKILLS.

26.01
Conduct a job search.

26.02
Secure information about a job.

26.03
Identify documents that may be required when applying for a job.

26.04
Complete a job application.

26.05
Demonstrate competence in job interview techniques.

26.06
Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other persons.

26.07
Identify acceptable work habits.

26.08
Demonstrate knowledge of how to make job changes appropriately.

26.09
Demonstrate acceptable employee health habits.

27.0
OBTAIN CERTIFICATION AS A FIRE FIGHTER.

27.01
Complete the basic fire-fighting course.

27.02
Pass the state certification test, including practical examination.

27.03
Pass a physical examination based on NFPA 1001.

27.04
Certificate will depend upon a passing score.

28.0
DEMONSTRATE KNOWLEDGE OF SEXUALLY TRANSMITTED DISEASES (STDs), INCLUDING AIDS.

28.01
Distinguish between fact and fallacy about the transmission and treatment of STDs, including HIV infection.

28.02
Identify community resources and services available to the victim of STDs.

28.03
Identify at-risk behaviors which promote the spread of AIDS and the public education necessary to combat the spread of STDs.

28.04
Apply infection control techniques designed to prevent the spread of STDs to the call of *all* patients, following CDC guidelines.

28.05
Demonstrate knowledge of legal aspects of AIDS.

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